Veterinary Medicine

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Cash Prizes for Veterinarians

An experience of twenty years in veterinary journalism has convinced the editor of Veterinary Medicine that the most valuable service this publication can render its subscribers is to facilitate the exchange of ideas, opinions, experiences, and discoveries among its readers. A veterinarian has only his ability to give in exchange for his living; the more he increases his ability by adding to his store of information, the more he has to sell, and the more he can get for it.

Veterinary Medicine for nearly a score of years has stood at the head of the list of all veterinary publications in the world in the number of experiences (case reports) of its readers that it has published. During most of these years, it has published, by actual count, more of these experiences than all other veterinary journals published in English combined. During the first eleven months of 1924, Veterinary Medicine published:

90 discussions pertaining to cattle practice.

77 discussions pertaining to horse practice.

46 discussions pertaining to small animal practice.

42 discussions pertaining to swine practice.

31 discussions pertaining to poultry practice.

19 discussions pertaining to sheep and goat practice.

144 miscellaneous or general discussions on practice or zootechnics. An average of forty each month.

So the publishers are not speaking without a knowledge of the facts or wide experience when they discuss the importance of this type of discussions.

The plan of awarding premiums to veterinarians for case reports submitted for publication with a view to inducing more veterinarians to contribute them is original with Dr. J. R. Mohler. The suggestion that this be done was made while he was editor of the Journal of the American Veterinary Medical Association. In putting the plan into effect, Veterinary Medicine, as usual, is first.

$300 in Cash Prizes

To stimulate an even greater interest among its readers in reporting their veterinary experiences for the benefit of others in the profession, Veterinary Medicine will give during 1925, $300.00 in cash prizes; $48.00 in subscription prizes, and an undetermined amount in other prizes, for case reports or other discussions of merit submitted for publication, the conditions of the award being—

Twelve first prizes of $15.00, one each month, for the most valuable discussion published.

Twelve second prizes of $8.00, one each month, for the second most valuable discussion published during the month.

Twelve yearly subscriptions to Veterinary Medicine, one each month, for the third prize.

Twelve fourth prizes of $2.00, one each month.

And in addition, to all others submitting case reports or other discussions that are published in the January issue of 1925, we will send a copy of the new 3rd edition of Hall's "Diagnosis and Treatment of Internal Parasites."

All manuscripts submitted in this contest are to become the property of Veterinary Medicine; but any not published will be released and returned to the writers on request. The closing date of the contest for each month will be on the 10th of the preceding month.

The awarding of prizes will be done by competent judges not connected with Veterinary Medicine. Different judges will pass upon the manuscripts for each month. Any writer having won two first, two second or two third prizes, will be eliminated from the competition for that particular prize during the remainder of the year.

The scope of discussions that may be entered in this contest is very wide and rather difficult to define. In general, it includes what is commonly referred to as "case reports," "clinical notes," "autopsy findings," "useful contrivances in practice," "helpful hints," "professional problems," etc. For the present minimal and maximal limits of 200 to 2,000 words will be set upon manuscripts admissible to this contest.

Papers detailing research work for which the writer is paid from public funds or general

papers read at association meetings or material published elsewhere (except translations from foreign languages) will not be admissible to the contest.

We urge readers to act at once. Write up and send in your interesting experiences of the past season while the details are still fresh in your memory. There is no limit to the number of manuscripts you may submit, only the provision that you may not win the same prize more than twice, except the fourth. There are more than fifty prizes available.

Your greatest reward will be the satisfaction of having contributed to the general fund of professional information and helped others. Second in value to you will be the credit and prestige accruing from the publication of your manuscript. And third is the more than $500.00 worth of cash and other prizes to strive for.

PUBLICITY FOR VETERINARIANS

Advertising for veterinarians, usually under the more euphonious term of publicity, has received much discussion of late. There seems to be a quite general agreement among veterinarians that the veterinary profession is not accorded a share of recognition by the public in keeping with its achievements.

Since publicity in this day is achieved very largely through the press, there is a disposition to charge our slight acclaim as a profession in the newspapers to ignorance or vindictiveness or cupidity or to some other shortcoming of the editors.

It has frequently been charged that the publicity given the plans and the work and the opinions of farm advisers is out of proportion to their merit or importance. Undeniably a public official is considered by newspapers a better source of news than a private individual, other things being equal. Perhaps the rapidly increasing number of county veterinarians (there are now 172) may in a measure remedy this. Surely the growth of public sentiment for the eradication of bovine tuberculosis would indicate that the public is as much interested in this as in any of the work of the farm adviser, and already, as is told elsewhere in this issue, the number of veterinary officials engaged in this work is 588 (see page 625). To use a trite expression, we shall watch to what extent they sell the profession to the public, and we shall judge their loyalty to the profession, in some measure, by their efforts and the success attending them.

Regardless of what our opinion of the press may be, we shall not likely be able to reform or change it. It will serve us best as a profession if we meet its requirements for publicity as the medical profession or the dental profession or the clerical profession does, to mention only three that are constantly before the public in the newspapers. We must recognize that what the press wants is news. That is what it sells, its stock in trade, the material on its shelves.

Personal publicity for the private veterinarian will not be easy of achievement in most instances, so long as he conforms to laws and customs of the country. Editors are very apt to opine that such publicity belongs in the columns for which they are paid advertising rates. Publicity for the profession they will eagerly accept and use when it conforms to the requirements of news. Forget not, however, that the editors, not ourselves, are the competent judges of news values.

On the subject of publicity, Arthur Brisbane, the most successful living publicist, has said: "Repetition is reputation. What we hear over and over we know. * * * * The question of publicity is a question of education. * * * * The problem is to get the information you possess into the minds of the more simple. * * * * An article must not be too heavy, too voluminous, too much at one time, for the untrained mind. Transform it into smaller articles and publish a bit in the newspapers every day, simply and plainly presented. If you can express yourself in a few lines, everybody will read your message, while if you put it in ten columns, not one in ten thousand will read it." Editors want to publish the things that everybody will read.

NUMBER OF HORSES DECREASING TEN PER CENT ANNUALLY IN CHICAGO

The number of vehicle licenses issued in Chicago for the first nine months of 1924 exceed the total number licensed in 1923 by more than 40,000. Unfortunately for Chicago veterinarians, the increase in vehicle licenses applies only to motor vehicles. The licenses for horse drawn vehicles have decreased from 22,804 for 1923 to 20,994 for 1924. This is a decrease of approximately 10 per cent, which has been about the average annual decrease in horse drawn vehicles in Chicago for a number of years. The total number of vehicle licenses issued in Chicago during the first nine months of 1924 is 329,936.

Farm Bureau's Attitude Discourages Veterinarians

The farm bureau of Hancock county, Illinois, is one of the larger active associations of its kind in the state. It employs a farm adviser and an assistant farm adviser. There is also a county veterinarian in this county.

The ambitious program outlined for the bureau for the coming year includes these projects: 1, Animal disease control; 2, Boys and girls club work; 3, Farm bureau supply company; 4, Co-operative marketing; 5, Soil improvement; 6, Farm management; 7, Crops; 8, Live stock; 9, Cow (milk) testing association; 10, Farm mechanics; 11, Orchard projects; 12, Co-operation with farmers' co-operative association of county; 13, Farm bureau exhibits; 14, Personal service; 15, Community meetings; 16, Publicity.

With so much for two farm experts and one veterinarian to do, it would appear that on the last named fifteen projects, the farm experts might employ their time to advantage, leaving the first named project for the county veterinarian to work out in co-operation with the local practitioners of the county. Such, however, appears not to have been the case. In the annual report of the activities of the assistant farm adviser, we are told:

"Cattle and hog vaccination have comprised the extent of the animal disease work, although a few calls have been answered to diagnose disease."

The farm adviser, however, was far more active in the matter of combating animal disease than was his assistant, stating in his report that: "During the year the farm adviser has on the average visited four herds of hogs a week for the purpose of diagnosing disease." He is expecting an outbreak of cholera, and a considerable part of his time during the next two months to be spent in looking after this work.

The farm adviser reports that 850,000 c.c. of serum and virus were used by farm bureau members, for which the members paid the bureau 77½ cents per 100 c.c. This is said to be 50 cents per 100 c.c. less than the average price charged by veterinarians in the county for vaccinating hogs, or a saving to the farm bureau members of $4,250. The adviser's salary is $4,000 a year.

The bureau buys its serum from the American Serum Company at 67½ cents per 100 c.c. We are told that the adviser could buy serum considerably cheaper than the contract price of the American Serum Co., but deems it inadvisable to make a change.

Also, "Numerous cases of necrotic enteritis and 'flu' in hogs have been diagnosed. Also we find many cases where worms are the principal trouble in the swine herds. Several calls have been received for the diagnosis of disease in poultry and cases of tuberculosis, cholera, fowl typhoid, chicken pox and roup, have been found." Apparently when he found coccidiosis in poultry, the farm adviser struck his first snag, for this was diagnosed from specimens sent to the state university.

Hemorrhagic septicemia bacterin is supplied by the bureau at 7 cents a dose and blackleg aggressin at 9 cents a dose and swine vermifuge at $6.75 a gallon. There has been considerable call for each of these remedies. Seven demonstrations of the use of the vermifuge were given.

The county veterinarian, whose salary is, in part, no doubt, paid by the farm bureau members as taxpayers, is expected, it appears, to confine his efforts to tuberculosis eradication in the county, for the starting of which the farm bureau organization claims credit. One can easily imagine who would do the tuberculin testing in Hancock county if it were not for the unyielding attitude of the Federal Bureau of Animal Industry and its control of the matter through the payment of indemnities. Score a good one for the B. A. I. on this count.

What's to be done about it? Well, that is something else again. We can tell what would be done about it if circumstances were slightly altered. Suppose Mr. Adviser spent "a large part" of his time on calls "to diagnose" the diseases of the children of members of the farm bureau and the ailments of the wives of members and suppose the farm bureau carried in stock and supplied the remedies for the conditions diagnosed. Ah, that is a different story! For one thing, the $1,000 contributed to the payment of the farm adviser's salary by the Smith-Lever act would at once be withdrawn, and the $1,200 contributed by the state and paid through the extension division of the university would likewise be withheld. Score one for the M. D.'s who look out for the welfare of their communities and incidentally for themselves.

If the farm bureau members of Hancock

county want quack veterinary service or quack medical service, perhaps in the interest of self-determination, they should have it, but the use of the Smith-Lever funds to pay for it is a misappropriation and prohibited by a ruling of the late Secretary Wallace. Further, those speaking for the state university have repeatedly stated that state funds may not be used for such service.

Much of the activity of the farm bureau in Hancock county is of a type that makes that community less desirable as a field for veterinary practice, and the inevitable result in time will be a less desirable veterinary service for the county. We doubt if the farmers would knowingly bring about such a condition. If a community desires a qualified veterinary service available in its emergencies, it will do well to give some thought as to how this service is to be maintained between emergencies.

VETERINARY MEMBERS OF THE A. P. H. A.

Last month a list of veterinary members of the American Public Health Association was published. A more careful examination of the membership roster of that association reveals 24 veterinary members in addition to those whose names were published. They are: Fred Boerner, Jr., Philadelphia, Pa.; Earle D. Clawson, West Palm Beach, Fla.; H. L. B. Coote, Michigan City, Ind.; C. P. Fitch, St. Paul, Minn.; J. P. Foster, Minneapolis, Minn.; Chas. F. Flocken, Minneapolis, Minn.; Ward Giltner, East Lansing, Mich.; W. C. Hollingsworth, Utica, N. Y.; R. P Huffman, Wilmington, N. C.; H. B. F. Jervis, Wassaic, N. Y.; R. A. Kelser, Washington, D. C.; E. D. King, Valdosta, Ga.; C. A. Krause, Portsmouth, Va.; R F. Leslie, Cleveland, Ohio; Wm. H. Lowe, Paterson, N. J.; K. F. Meyer, San Francisco, Cal.; J. R. Mohler, Washington, D. C.; B. N. Pennell, New London, Conn.; S. L. Pilgrim, Milwaukee, Wis.; C. R. Potteiger, Philadelphia, Pa.; W. F. Reasner, Minneapolis, Minn.; John Reichel, Glen Olden, Pa.; E. C. Schroeder, Bethesda, Md.; Louis Van Es, Lincoln, Neb.

Drs. J. F. Winchester, Lawrence, Miss., and Fred Torrance, Ottawa, Canada, were members of the A. P. H. A. at the time of their demise.

Speaking of this matter, Dr. Ward Giltner says: "Every veterinarian should be interested in public health work. It would be much better for the profession as a whole and it would react very favorably upon the individual veterinarian."

LOUIS PASTEUR

The achievements of great men live long after them and immortal indeed are those who, by their works, add to the span of human life, and contribute to the sum of health and happiness Some men do not belong to any country, race or creed, but to all mankind. Such a man was Louis Pasteur. Although he has been dead many years, the fruits of his work are with us and continue to give inspiration to scientists and students throughout the civilized world.

Pasteur was one of the greatest men who ever lived, a man to whom every human being owes much, and to whom the whole world is indebted for his contributions to the conquest of disease. Like other great men who have lived and worked for the good of the human race, he was one who saw the wonders of common things.

Pasteur, through his investigations of the prevention of bacterial disease, has become our benefactor forever. He lives with us. His great heart is the heart of a living friend, and his genius, that opened up a vast field of scientific discovery, has served as an inspiration to those who followed him, and will be an inspiration to those who are yet to follow. As a result of his researches more has been learned about human disease in the last seventy years than in the previous seventy centuries!—H. N. Bundesen, Health Commissioner, Chicago.

SMALL-POX VACCINATION

During the latter half of the eighteenth century, the inoculation of humans with cow-pox for the prevention of small-pox was practiced by the peasants in some parts of England. It was a tradition in those parts that one who had had cow-pox would not contract small-pox, at that time the greatest scourge of the human race. This came to the attention of Edward Jenner as early as 1770. He was 21 years old at that time and just beginning the study of medicine. He gave much thought and some investigation to the matter continuously from then on, but so great was the prejudice against this sort of thing in the medical profession that it was not until 1796, twenty-five years later, that he performed his first vaccination and subsequently applied the test of small-pox inoculation. His results were published to the world in 1798. Within two years, from an unknown country practitioner, he became the best known medical man in the world. He had conferred on mankind the greatest universal blessing it has ever experienced.

In Fred Smith's "History of Veterinary Lit-

erature," appearing serially in The Veterinary Journal, we learn that Jenner gave much attention to diseases of cattle and horses and wrote somewhat on these subjects. Among such works was a paper entitled "Observations on the Distemper in Dogs," and another on the "Nature and Cure of Foot Rot." He also discussed "stringhalt" in horses and "red water" in cows and advocated the doctrine of a pure water supply for dairy cows.

THE WORK OF TUBERCULOSIS ERADICATION

The report of the Bureau of Animal Industry on tuberculosis eradication for August is a record of rapid progress. It shows that 43,572 herds of cattle, comprising 461,186 animals, were tested during the month. To date there are 775,758 herds under supervision, 585,522 once tested free herds, and 51,262 accredited herds. The reactors during the month numbered 13,780.

In the number of herds tested, the leading ten states were: North Carolina, 5,105; Wisconsin, 4,714; Michigan, 4,486; Illinois, 4,141; New York, 3,063; Iowa, 2,598; Indiana, 2,356; Pennsylvania, 2,325; Minnesota, 1,682; and Kentucky, 1,570.

In the number of animals tested, the leading ten states for August were: Wisconsin, 85,142; Iowa, 42,443; Illinois, 40,666; New York, 40,117; Michigan, 33,031; Minnesota, 32,302; Indiana, 19,330; Pennsylvania, 13,529; Ohio, 12,630; and North Carolina, 11,562.

In the number of fully accredited herds to date, the leading ten states in August were: New York, 8,163; Indiana, 7,831; Wisconsin, 4,318; Minnesota, 4,086; Iowa, 3,756; Pennsylvania, 2,849; Vermont, 2,685; North Dakota, 2,501; Maine, 1,640; and Ohio, 1,420.

North Carolina has a long lead over all the other states in the number of herds under supervision, the number being 120,325. Michigan is second with 61,429, and Wisconsin third, with 50,421 herds under supervision. Then in order follow: Iowa, 49,508; Missouri, 49,140; Illinois, 48,078; Indiana, 35,934; New York, 33,446; Kentucky, 30,548; and Washington, 26,239.

The number of veterinarians devoting their entire time to tuberculosis eradication is 588, comprising 199 Bureau of Animal Industry veterinarians, 217 assistant state veterinarians and 172 county veterinarians

The number of herds tested by accredited veterinarians for the calendar year of 1924 was 24,141 (estimated for December) and the number of animals 440,581. This is almost exactly three times the number of herds and three times the number of animals tested by accredited veterinarians during 1923, although the total number tested in 1924 was only about two-fifths more than in 1923; this shows, therefore, a remarkable increase in testing by accredited veterinarians.

The total number of cattle tested during 1923 was 4,110,249; the number for 1924 was 5,819,621 (estimated for December). During the year 48 counties were placed in the modified accredited area, i. e., an area having less than one-half of one per cent of tuberculous cattle.

The first organized opposition to the tuberculosis eradication project developed during 1924. The society behind the movement is the American Medical Liberty League. A vigorous fight over the matter, that is not yet settled, ensued in one state.

OFFICIALS AUTHORIZED TO INSPECT ANIMALS WITHOUT CONSENT OF THE OWNER

A decision having an important bearing on the authority of live stock sanitary officials in the control of infectious diseases of animals, was handed down recently by the Circuit Court of Wayne County, Michigan.

Objection was made by the owner of a herd of cattle to the inspection of his animals in the furtherance of area work in tuberculosis eradication. The inspection was refused on the grounds that the statute authorizing it was unconstitutional on account of being in contravention with provisions both in the Michigan and the United States constitutions, guaranteeing citizens against unreasonable searches and seizures. The defendant held that his property could be entered upon and the inspection made only upon an order from a court of competent jurisdiction, i. e., a search warrant.

The court overruled the defendant, ruling:

"* * * * * the right of the State Commissioner to enter upon the premises of the defendant and to conduct the inspection of his cattle in order to determine, as he is by statute directed, whether they are afflicted with a contagious or infectious disease, does not depend upon the procurement of a search warrant.

"Such entry and inspection are lawful if they are not unreasonable, and they are not unreasonable if honestly and fairly conducted in the interest of the public health and welfare.

"In the absence of evidence, the court cannot hold that this search or examination for the

purpose of determining whether disease exists in defendant's cattle is unreasonable. It may be necessary not only for the benefit and protection of the community at large, but of the defendant himself if it is reasonably and intelligently conducted If unreasonably or unfairly conducted the courts are open to grant redress.

"Administrative officials must on occasion perform duties which affect private property and its possession. It is the abuse of their authority which first concerns the court. Entries upon private property and investigations of private property are constantly being made to determine whether animals are diseased, whether articles of food carry disease germs, and are unfit for use, whether elevators, boilers, stairways are safe. All this is done under legislative warrant and without judicial warrant. If judicial process were required in each case, it is clear that the state agencies created to safeguard the health of the people could not function."

FOOT-AND-MOUTH DISEASE IN TEXAS UNDER COMPLETE CONTROL

At this writing there has been no reappearance of foot-and-mouth disease in the Texas outbreak for a period of more than thirty days. Promptness in discovering the outbreak and slaughtering and burying infected and exposed animals, has confined the disease to a small area. All told about 8,000 head of cattle and a small number of sheep have been slaughtered as a result of this outbreak.

CORN STATES SERUM COMPANY HOLDS PRIZE LETTER CONTEST

Much has been written and more talked during the past two or three years as to the advantages and disadvantages, in short, the desirability of advertising for veterinarians; but little has been done to this end, and that little has been more or less haphazard, a fatal weakness where publicity is concerned.

The most favored plans for advertising for veterinarians so far discussed at veterinary meetings have contemplated either carefully prepared articles, acquainting readers with the achievements of the veterinary profession, for publication by veterinarians in their local papers, or a series of more or less personal letters and circulars signed by a veterinarian and mailed to his clients and prospective clients, the intent of the letters and circulars being to educate the live stock owners to make the fullest use of veterinary services.

With the purpose of enabling veterinarians to make a start on the latter plan at no cost and very little trouble to themselves and at the same time increase the demand for the vaccination of hogs, the Corn States Serum Company has inaugurated a prize letter contest for hog owners, to be carried on through local practitioners. The plan is said to be meeting with much favor among veterinarians.

There is no cost or obligation to veterinarians participating in the plan. Merely write the Corn States Serum Company, 1025 Mason Street, Omaha, Nebraska, stating how many of the announcements you will mail to live stock owners, and you will be supplied with the cir-

STUDENT POPULATION OF AMERICAN VETERINARY COLLEGES FOR THE PAST FIVE YEARS. COMPILED FROM DEANS' REPORTS BY DAVID S. WHITE, COLUMBUS, OHIO.

	1920–1921						1921–1922						1922–1923						1923–1924						1924–1925					
Name of College	1st Yr	2nd Yr	3rd Yr	4th Yr	Sp	Totals	1st Yr	2nd Yr	3rd Yr	4th Yr	Sp	Totals	1st Yr	2nd Yr	3rd Yr	4th Yr	Sp	Totals	1st Yr	2nd Yr	3rd Yr	4th Yr	Sp	Totals	1st Yr	2nd Yr	3rd Yr	4th Yr	Sp	Totals
Alabama	20	15	12	6		53	10	5	14	12		41	6	5	8	13		32	3	2	4	7		16	6	3	6	6	1	22
Colo.	26	22	20	20		88	23	13	19	16	1	72	17	14	12	19	2	64	10	15	12	13	1	51	6	5	14	11		36
Georgia	7	7	3	4		21	9	5	5	2		21	7	7	6	5		25	2	8	7	5		22	7	2	7	7		23
Iowa	30	24	18	22		94	28	17	18	19	6	88	25	22	15	17		79	32	24	18	16		90	27	27	17	17	1	89
Kansas	9	20	13	18	1	61	12	10	23	10	4	59	10	14	18	22	1	65	11	10	16	16		53	20	8	11	16	5	60
Mich.	1	8	4	8		21	11	5	6	6	1	29	13	10	9	7		39	5	10	11	8		34	11	7	10	10	2	40
N. Y.	13	32	15	16	2	78	15	13	29	16	4	77	31	11	16	31	3	92	29	25	10	19	3	86	19	26	21	10	5	81
Ohio	19	30	30	25		104	14	13	24	35		86	19	12	15	25	4	75	13	12	22	20	5	72	7	7	23	30	2	69
Ontario	24	32	22	17		95	13	23	35	19		90	17	11	22	37		87	16	13	15	27		71	23	16	15	15		69
Penn.	4	8	7	11		30	11	5	8	7		31	11	11	5	8	2	37	14	10	10	5	2	41	25	10	10	10	1	56
Texas	1	5	2	6	4	18	5	1	3	4		12	6	6	2	2		16	11	4	5	2		22	3	6	5	6		20
Wash.	3	1	6	12		22	7	2	7	6		22	6	5	4	4		19	8	8	4	6		26	10	6	8	3		27
Totals	164	207	157	173	7	708	163	113	192	157	16	641	168	128	132	190	12	630	154	141	136	144	11	584	164	123	147	161	17	592

culars, or send to the company a list of the farmers to whom you want the circular sent in your name, and they will do the mailing.

BULLETINS EVERY VETERINARIAN SHOULD HAVE

The Culling and Feeding of Poultry, by B. F. Kaupp. Bulletin of the North Carolina Department of Agriculture, Raleigh, N. C., August, 1924. This bulletin comprises a very comprehensive discussion of the subject, embodying a summary of the results of ten years' experimental work. It is profusely illustrated. Copies may be had free by addressing the author.

Coccidiosis of Poultry, by Robt. Graham and E. A. Tunnicliff, Illinois Agricultural Experiment Station Circular No. 288, Urbana, Ill. A brief report on the occurrence, cause, symptoms and prevention of coccidiosis in chickens in Illinois. Illustrated by half-tones and colored charts.

Fowl Cholera, by Robt. Graham and I. B. Boughton, Illinois Agricultural Experiment Station Circular No. 286, Urbana, Ill. In a twelve-month period, fowl cholera was reported to the authors from 28 counties in Illinois. It is classed as one of the most important diseases of poultry. The symptoms and post-mortem findings are described in some detail, and sanitation recommended for the prevention of this disease. The article is illustrated by half-tones in black and white and in colors. The circular is intended for farmers.

Fowl Typhoid, by Robt. Graham and E. A. Tunnicliff, Illinois Agricultural Experiment Station Circular No. 287. A brief statement for the farmer of the cause, symptoms and means of control of this disease. Illustrated.

Tuberculosis of Fowls, by Robt. Graham and E. A. Tunnicliff, Illinois Agricultural Experiment Station. A brief statement of the cause of this disease, its prevalence, how it is spread, its symptoms and control. It is stated that in some localities of Illinois tuberculosis is regarded as one of the most destructive plagues of the poultry industry. "Eggs for breeding and hatching" is given as one of the means of spreading this disease, and again, "It is probable that chicks hatched from infected eggs die (from tuberculosis) during the first few weeks of life." It is commonly accepted among veterinarians that tuberculosis is not spread by eggs of infected fowls—that infection of the egg does not occur. Nothing is given in this circular to substantiate the statement that infected eggs are a source of danger.

Botulism in Fowls, by Robt. Graham and I. B. Boughton, Illinois Agricultural Experiment Station. A very brief discussion of the cause, symptoms and prevention of this disease. The use of the term "limberneck," a group name as synonymous with botulism in poultry, is likely to lead to confusion as is also the indistinct differentiation between paralysis due to eating decaying meat (and maggots therefrom) and similar symptoms due to the ingestion of botulinus toxins. Illustrated.

Further Studies in the Diseases of the Reproductive Organs of Cattle, by E. T. Hallman. Reprint from the Cornell Veterinarian, July, 1924. Obtainable from the author, East Lansing, Mich. This is a careful record of research work done by the author at the Michigan Agricultural Experiment Station and constitutes an important contribution to the literature on contagious abortion in cattle.

Principles of Dairy Barn Ventilation. Farmers' Bulletin No. 1393, U. S. Department of Agriculture, Washington, D. C. This bulletin explains the general principles underlying the ventilation of barns and discusses the system of barn ventilation in common use.

Fattening Steers in the Corn Belt. Farmers' Bulletin No. 1382, U. S. Department of Agriculture, Washington, D. C. This is a discussion of the whole subject from buying to marketing. Much attention is given to feeds and combinations of feeds.

Mycotic Stomatitis of Cattle, by John R. Mohler, Chief, Bureau of Animal Industry, U. S. Department of Agriculture Circular 322. This circular was originally issued in 1904 and has now been reprinted with slight revision. It is of particular interest at this time because of the importance of distinguishing mycotic stomatitis from foot-and-mouth disease, which it closely simulates. A brief but comprehensive discussion is given, including cause, symptoms, prognosis, differential diagnosis and treatment.

Meadow Death Camas (Zygadenus Venenosus) as a Poisonous Plant, by C. Dwight Marsh. U. S. Department of Agriculture Bulletin No. 1240. This describes the species of death camas especially characteristic of the states bordering on the Pacific Ocean. The plant affects sheep more than any other class of animals, although many horses are poisoned and some are killed. While it is poisonous to cattle, few are injured under range conditions. Swine are probably not harmed, because they promptly expel the plant

by vomiting. The bulletin comprises an excellent account of the plant and its poisonous effect on animals. Illustrated.

Horse-Flies: Biologies and Relation to Western Agriculture, by J. L. Webb and R. W. Wells, Bureau of Entomology. U. S. Department of Agriculture Bulletin No. 1218. This 35-page bulletin describes the blood-sucking flies of the family Tabanidae which in some localities are very serious pests to horses, cattle and other domestic animals. It is stated that several repellents were tested, but none of them gave any marked protection, as tabanids are very determined biters, and repellents applied frequently enough to give any protection have a harmful effect on the hair and skin of the animal. The bulletin is illustrated with four full page plates and 18 other cuts.

Food Animals and Meat Consumption in the United States, by John Roberts. U. S. Department of Agriculture Circular 241. This circular contains several interesting tables and charts showing the number of cattle, sheep and swine on farms in this country from 1850 up to the present year, the trend of human and livestock population, number of purebred animals in each state, number of animals slaughtered, exports and imports of meat, per capita consumption of meats, etc.

Contagious Abortion in Cattle. Prevalence of and losses due to cattle abortion; causes of abortion; how abortion starts and spreads; when and where the germs locate; results of abortion infection; how to detect the disease; what to do and how to do it; complications and sequels; practical suggestions for herd and stable management. The foregoing topics are discussed by Dr. F. B. Hadley in Bulletin 368 of the Agricultural Experiment Station, University of Wisconsin, Madison. Apply to the author for copies.

Beef on the Farm—Slaughtering, Cutting, Curing, by W. H. Black and E. W. McComas. Slaughtering beef on the farm or ranch is the only means of obtaining fresh beef in many localities. Home dressing of beef often makes it possible to procure meat at a considerable saving. Blocky, healthy animals, in good condition, yield the most desirable beef. Simple equipment and methods, described and illustrated, enable farmers to follow each step in the process of converting live animals into meat. These and other matters pertaining to butchering on the farm are discussed in Farmer's Bulletin 1415, published by the U. S. Department of Agriculture. It may be had upon request.

Parasites and Parasitic Diseases of Sheep, by Maurice C. Hall, U. S. B. A. I., Dept. of Agriculture Bulletin No. 1330. Sheep probably suffer more from parasites than do any other kind of livestock. Most of the loss in sheep, mutton and wool is from animal parasites, as sheep suffer comparatively little from bacterial diseases. Lambs and young animals are most susceptible to parasites and suffer most from them. Parasite eggs pass in the manure, usually. The disposal of the manure determines the fate of these eggs. Parasitized animals usually do not have fever; they are unthrifty. This unthriftiness may have a fatal termination. Postmortem examination of one of the sick animals may disclose the trouble. This bulletin gives a concise discussion of the most important parasites of sheep, including their treatment and prevention. Illustrated.

Udder Diseases of Dairy Cows, by Hubert Bunyea, Bureau of Animal Industry. Farmers' bulletin No. 1422, recently issued by the U S. Department of Agriculture, discusses this subject in some detail as indicated by the following subheads which receive consideration: characteristics of the udder; prevention of diseases and injuries; drying off the cow; separation of cow and calf; vices; inflammation of the udder (mammitis, mastitis, garget); induration of the udder; abscess of the udder; gangrene of the udder; tuberculosis of the udder; cowpox; chapped teats; warts; tumors; stricture; atresia; insect stings; snake bites; wounds or contusions; leaky quarter and fistula; bad flavors and odors of milk; bloody milk; milk stone or calculus; agalactia or suppression of milk; milk fever.

Care and Management of Dairy Bulls, by J. R. Dawson, Bureau of Animal Industry. Good dairy bulls are worth so much for building up the production of dairy herds that they should be properly taken care of. Because of their temperament, dairy bulls are often difficult to handle; consequently, they do not always receive proper care, exercise and management. Many bulls, because they are not properly managed, fail to give best results as herd sires Farmers' bulletin No. 1412, U. S. Department of Agriculture, tells briefly how to handle dairy bulls safely and how to keep them in good condition, and also discusses numerous problems bearing on their care and management. A number of illustrations showing methods of casting and of holding the feet for trimming, are valuable features of this bulletin.

Another Week of Practice

By E. T. Baker, Moscow, Idaho.

The past summer has been the driest ever known. We had very little snow last winter, consequently the irrigated sections have suffered considerably. However, this section does not depend on irrigation, and our main crops are wheat, peas, beans, oats, barley, alfalfa and fruit. We were sprinkling our lawns last April, and with only a few little showers from March to September, our crops turned out remarkably well.

But in keeping with other farming localities, our ranchers have been hard hit. Financial conditions are far from being good, and land that sold for $250 an acre in boom times is occasionally changing hands now at around $60 to $80. Perhaps it would not be exaggerating to say that fully one-third of our ranchers, big and little, were broke or badly bent.

Veterinary practice has suffered with farming. According to the official records, there are 140 veterinarians, graduate and non-graduate, registered in this state. Of these, 82 are residing in the state, and a number of these are engaged in other occupations than practice. Twenty reside out of the state; 36 had their licenses cancelled last year, and two are dead. It will thus be seen that fully one-fourth of all our registered veterinarians in Idaho have quit and gone into other occupations.

Practitioners have seen their work gradually dwindle away. This has been due to the inability of the stock owners to summon them, and to various other interests, such as much of their legitimate calls being taken over by federal or state agencies. In fact, out west, if it had not been for a fairly good price for dairy cattle, and sheep on the ascendant, practice would have been very dull indeed. At present, horses are being sold at auctions for $30 to $75 for good ones. There is no doubt but that horses will come back somewhat, but when?

This prelude is being given to show our actual conditions. The writer receives letters from many practitioners back east or in the middle west wishing to know of conditions out here. If you think that the west is a place of golden opportunity for veterinarians at the present time, disabuse yourself of this idea. The only reason the writer has been able to keep up a fairly comfortable income is due to his wide acquaintance among stockmen of the whole northwest, and a few long distance calls help out wonderfully.

Of course, there may be optimistic souls who might recommend young friends of theirs to study veterinary science just now, but their birthdays do not come on February 22nd.

To give an idea of what kind of a summer practice we have, the writer kept a record, and used his Graflex on all the cases occurring in daylight one week. It will be seen that we have variety enough to keep one guessing and then some. In winter, about ninety per cent of our cases are impactions and acute indigestions, while in spring, summer and fall we are apt to have anything.

Case No. 1. Atheroma in horse.

Case No. 1

Atheroma in young horse's nostril. It was lanced, the contents squeezed out, and packed with gauze and iodin. A healing salve was rubbed all around the area, which has a tendency to keep down itching and repel flies. This is made up as follows: Melt a pound of petrolatum in a water bath, and two ounces beeswax in a separate vessel. Pour both into a heated mortar, and mix well. Stir in two ounces kerosene, eight ounces sodium bicarbonate, one dram benzaldehyd and red color. Stir until cool. A very handy twitch is made by boring two holes in a buggy spoke and making a loop through both. This is superior,

to the writer's thinking, than just one hole through which the rope is looped. We use a heavy sash cord, and have one of these twitches in every grip.

Case No. 2

A stray dog chased a young Holstein heifer, about six months old, into a barb wire fence. She sawed a gash over the nasal bones clear into the turbinates. The parts were cleaned as well as possible, and sutured with No. 18 twisted silk. The healing ointment and a liq. comp. cresolis wash several times a week gave the results shown in the picture. Suturing seems to be all right in bovine practice, but it is useless in equine cuts.

Case No. 3

Traumatic pericarditis in a grade Jersey cow, about six years old. She gradually became

Case No. 2. Wire cut in Holstein calf.

worse after this photo was taken, and died in about a month. A small piece of wire was found and the pericardial sac had several gallons of fluid in it.

Case No. 4

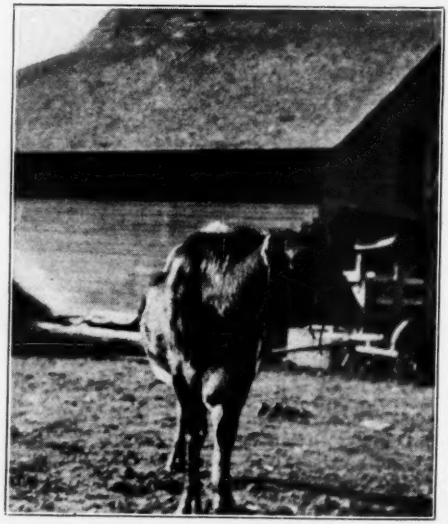
Neglected wire cut on canon bone. This had been treated by the owner with blue vitrol, lime, and other "non-irritating" substances. We used an ointment on this that has given good results in this kind of cases. It is made like the healing ointment mentioned above, except that four ounces salicylic acid and two ounces balsam Peru are mixed into the petrolatum and beeswax. For the lump, one can use any ob-

Case No. 2. A month later.

sorbent blister, but this ointment will be found very useful in "waking up" slow healing ulcers. The unguentum thuja is also very good.

Case No. 5

Fractured femur in a ten-year-old saddle mare. She was running in the field with a bunch of horses, and jammed into a post, the result being a greenstick fracture of the left



Case No. 3. Traumatic Pericarditis. This cow died two weeks later, and a piece of wire was found in the pericardial sac.

femur. The .25 calibre automatic Colt revolver, which the writer usually carries in the side pocket of the Buick roadster, was used, and the poor victim fell dead without a struggle. We usually aim a little to the left of the median line, high up, so that the brain is fairly hit and instantaneous death results.

Case No. 6

On our way home from the preceding case, we were stopped by a rancher who had just found his best gray mare standing by a barb wire fence, with a big gash on the left shoulder. She had evidently bled a bucketful, but the bleeding had ceased. We gave her ethereal camphorated oil, and a Reeks' capsule. Then the edges of the cut were scissored away, so that good drainage would result. We left an eight-ounce bottle of vulnerary balsam to be applied twice daily with a feather, and later on the owner came in for a dusting powder. These cuts are the easiest of all to handle, and are "apple sauce" to treat. We might say that we gave the animal a polyvalent bacterin. Just

Western sheep on forest range.

whether bacterins do much good is a conundrum to the writer in these cases, but they don't do any harm.

Case No. 7

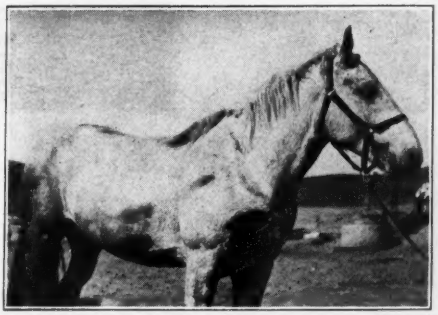
Sheep man in trouble; had lost about 80 ewes out of a band of some 2,000. On account of excessive dry season, impaction was diagnosed, and it must have been correct, for more salt and moving onto better range gave results, while three brand new twenty-dollar bills changed hands. Sheep men are prosperous.

Case No. 8

So-called "summer itch" in horse. The principal lesions were on the neck, head, and under the belly. This is a very peculiar disease, as any practitioner knows, and what will cure one case may fail in another. Sometimes it seems to follow intensive feeding of grain hay, but just exactly what it is, whether of a parasitic nature or more like eczema, has never been

Case No. 4. Neglected wire cut, with proud flesh and enlarged metacarpus. One of the hardest cases to cure.

solved by the writer. However, as he has had very little trouble since adopting the following treatment, he is not worrying about the etiology. Give the owner a two-ounce bottle of liq. comp. cresolis, and tell him to mix half of this in a half gallon lukewarm water and scrub parts well. This makes about a one to fifty solution. Then, after the skin has been thoroughly dried, apply the following ointment: Melt five pounds petrolatum, and stir in eight ounces pine tar, four ounces oil of cade, sixteen ounces liq. comp. cresolis and one and one-half pounds of sifted sulphur. It usually takes about a pound of this to a case. Give a little Fowler's solution once or twice a day, and in very bad cases, the writer usually shoots in a dose of anti-influenza bacterin. Where the animal is almost frantic with itching, a tablespoonful each of sodium hyposulphite and fluid extract of belladonna to a quart of warm water is very good, applied to the parts.



Common type of barbed wire cut. On account of natural drainage, very easy to handle.

Case No. 8. So-called "summer itch." Sores are also found on belly, sides and under breast. Very troublesome to handle.

Case No. 9

Abscess in region of poll. Not exactly poll evil, but about as hard to handle. Usually comes from bumping head on low sill or in a home-made manger. A lump the size of a young cantaloupe first appears, and when this is lanced, about a pint of pus squirts over the immediate vicinity. The writer then takes blue vitriol and charcoal, equal parts, puts them in a small capsule, and inserts this in the opening. It is then packed with gauze. Any kind of fly repellent can be used. and in a few days the membranes are destroyed. In about half these cases, recovery is uninterrupted; in the other half, one may have a regular fistula to work on for all summer. These cases are given fibrosol several times a week, and balsam of Peru and salicylic acid ointment put in. The case shown in the picture was lanced in April, and had completely healed by August.

Case No. 10

Just simply had to go to the circus. We snapped the elephants hauling water, and a number of other animals.

Case No. 11

Our old friend milk fever, of the quiet type. We treat these by giving quarter-grain doses of atropin every half hour or oftener if the weather is real hot, and camphorated oil. Then, an ounce of Devine's mixture of equal parts of tinctures digitalis, nux and strophanthus is carefully given on the tongue; the back well rubbed with a stimulating liniment, and the cow is inflated, and kept up on the brisket. Where we have the eclamptic type, chloral is given rectally, and a big H-M-C. Some practitioners swear by strychnin and have good success, but the writer is not very enthusiastic about it.

Case No. 12

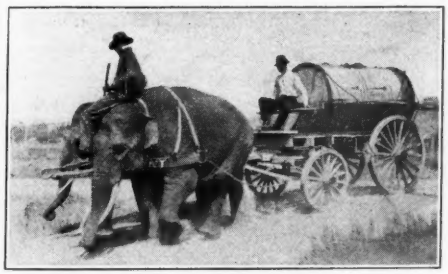
Another equine accident. A mail carrier had a horse get kicked by another sharp shod one on the hip. Trimming the flap off with curved scissors, it made a rapid recovery, using the ordinary line of wire cut medicine.

Case No. 13

This was the hardest case of the whole outfit. A timber rat (which is the polite name for a western wood hauler) started out with a cord of red fir for town, some eight miles distant. The team had been kept up in the barn for several days, as the flies and gnats were very bad. About a mile, the mare broke out in a sweat, and by another mile she had gone down once. However, she had these spells of colic, and the owner kept going with her, until about two miles from town, she went down completely. Still he got her up, and she made it to town, so that you will realize what kind of a real, honest-to-God case of azoturia we had to treat. The owner was a very kind-hearted fellow, and when he found out the nature of the ailment, he felt very bad over having driven her so far. Having just heard of Dr. Aulgar's chloral treatment, we decided to use it, as the mare sure looked like a forlorn hope. As we were unable to give it intravenously on account of the animal's nervousness, we mixed up six ounces

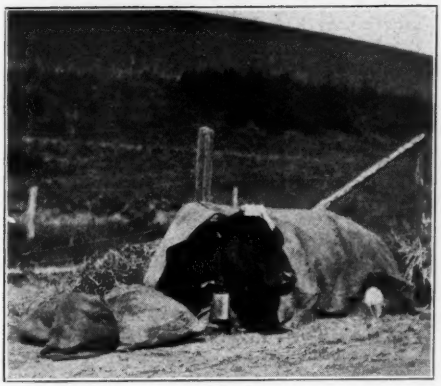
Case No. 9. Abscess in region of poll, caused by hitting head against low ceiling.

chloral in a half gallon of water, with a little acacia, and poured that down her. Then we gave digitalin and camphorated oil hypodermically; drew the urine which was as red as blood; rubbed liniment all over the back and loins, and gave a physic capsule of the aloin, calomel and ginger type. She was made as comfortable as possible. This was Friday noon. Saturday, there was no improvement, although she seemed quiet, so we gave her another six ounces of chloral and a pint of mineral oil. Sunday found her still down, and we gave her an azoturia treatment put up by a very reliable veterinary supply house. Monday, the urine had cleared up, and we gave her some citric and oxalic acids in water. The owner had camped right beside her, and turned her over four or five times a day, and we used a dusting powder to mitigate bed sores. He also fed her a quart of whole oats, and she was given water whenever she wanted it. Tuesday found her still paralyzed,



Just simply had to go to the circus. On the water wagon.

so we gave her a fibrosol in hopes of helping relieve some pressure. In other words, we used her for an experiment station, as she seemed a hopeless case from the start. Wednesday morning about nine o'clock, she made a mighty effort, and got up, and what is still better, stayed up. With the exception of leaving a little camphor water to instill into the badly inflamed eyes, she received no further treatment, and made a fine recovery. Now, this is only one case, and the next one, apparently not so bad, may "go flooey." Mares seem to stand more than geldings, but when a case is down forty-eight hours and begins to get delirious the chances are pretty slim. What the writer does not know about azoturia—although we have treated several hundred cases in the past fifteen years—would fill a large book, but if chloral can overcome the toxemia, is azoturia and eclampsia related? But we will leave this question for brighter minds to ponder over.



Case No. 11. Milk fever of the quiet type.

But the case recovered, and while the chances are we will get our reward in heaven (for the owner is poor), the animal received the same care and treatment as though it belonged to a millionaire.

Case No. 14

Our last case for the week was a bad attack of cow pox, which has almost covered the entire udder of a Jersey cow. We painted the parts with a saturated solution of picric acid, and told the owner to do the same for a couple of days, and left a box of ungt. leniens. As the milk was a little curdy in one quarter, we gave four ounces sodium thiosulphate dissolved in a pint of water as a drench. With the exceptional cases, the above does very well for us. For the mild cases, any treatment suffices. Of course, when you run across a dairyman who has taken some short course in veterinary science and who knows more than any practitioner, and who daubs on his own dope besides, give a guarded prognosis.

Case No. 12. Kick on rump by sharp-shod horse.

So the week is completed. There has been enough variety to keep one's mind—provided a practitioner has any brains—busy. We have had easy cases, stubborn ones, recoveries and deaths.

The only excuse for writing these cases and taking the pictures is to bring out some other practitioner's experience. You may have some line of treatment that I lack, and in this way, we may be of mutual benefit to each other.

Items of Interest to the Practitioner

By A. T. Kinsley

The house fly (Musca domestica) is a pest of considerable importance. It has been calculated that two millions of dollars are spent annually for fly paper and ten million for screening; fifty million for the handling of tuberculous patients attributable to infection spread by these pests, seventy million for the care of typhoid patients traceable directly or indirectly to flies, and over thirty million dollars expended in the care of intestinal disorders and dysentery cases of fly origin. This expenditure and the untold suffering incident to disease could be largely avoided by simple sanitary measures. The fly breeds in filth and principally in horse manure. The proper disposal of horse manure or treatment of undisposed manure heaps will reduce the number of house flies very materially. Borax and hellebore have been found to be quite effective in destroying the fly larvae in manure. One pound of borax to 16 square feet of manure and one pound of powdered hellebore to 20 square feet of manure destroys about 90 per cent of larvae. Veterinarians can be of considerable service in giving advice relative to the control of house flies.

There were 63,799 cattle received in the Kansas City Stock Yards on Monday, Sept. 8th, 1924. This is the largest number of cattle received at any public market in one day.

The largest sheep station in the world is Tierra del Fuego, in the southern part of Chile. One company there shears two million, five hundred thousand sheep annually.

The legislative bodies of Georgia have received a favorable report from its committee on education on a bill to withdraw all state funds from any school or other institution at which the Darwin theory or any other similar theory of evolution is taught.

The occurrence of abscesses in the intermaxillary tissue of swine, both vaccinated and unvaccinated, is rather common. Little difficulty is experienced in relieving this condition as the affected animal usually makes a complete recovery after incising the lesion and thus providing drainage.

Approximately 200 distinct species of insects are either directly or indirectly associated with and responsible for the occurrence of disease in man and other animals. It is not possible to accurately estimate the economic loss incident to these pests, but it is safe to say that their annual toll amounts to hundreds of millions of dollars.

The approximate annual slaughter of meat producing animals in the United States is as follows:

Goats, 90,000; sheep, 11,000,000; swine, 37,500,000; cattle, 8,500,000; calves, 3,000,000.

A large portion of the meat from the sixty million slaughtered animals is consumed in the United States.

Quinin and urea hydrochlorid solution is highly recommended in the treatment of pruritis ani in the human. From one-fourth to one-half per cent solution has been used in quantities up to 300 mils. The injection relieves pruritis at once and excoriations are rapidly repaired. This line of treatment is suggested in cases of "mad itch," ivy poisoning, etc., in cattle and horses. Reports on this method of treatment will be gladly received.

It is not generally realized that the screw worm is responsible for an annual loss of over four million dollars. This parasite is particularly prevalent in the Southwest. The ravages of this parasite have become so extensive that the United States Department of Agriculture established a field laboratory for the purpose of studying this parasite. It is possible that an efficient and economic method of control may be found.

Some cases of anthrax have developed in cattle shipped to markets from anthrax areas in the southern states. The danger of spreading anthrax over large areas of non-infected country has caused the sanitary authorities of different states to place an embargo on several counities of Arkansas.

Epithelioma contagiosum and coccidiosis are more or less prevalent in poultry in Hawaii. A very virulent and rapidly fatal form of occidiosis has been reported. The climate of Hawaii is ideal for poultry production but the same conditions may particularly favor parasites of various types.

The health departments of large cities usually require or at least favor pasteurization of milk, but in some instances the pasteurization required is entirely inadequate and inefficient. Health boards of medium-sized towns usually stress the value of tuberculin testing of all dairy cows.

About one-half of one per cent of fox puppies are hairless. The cause of this condition has not been determined. The affected puppies are hairless at the time of whelping and although they appear to be healthy, they remain hairless throughout life. It would be interesting to know the results of breeding these hairless foxes. The hairless fox is known as a Sampson.

Bayer 205 has been found to be of value as a prophylactic and curative agent for mal de caderas. As a prophylactic, one dose of two grams injected intravenously apparently protects horses against the infection. Three doses of two, three and four grams injected intravenously has been successfully used in the treatment of over one hundred affected horses by Migone and Osuna. This treatment is said to be effective in advanced cases of the disease. This preparation (Bayer 205) appears to have a specific action on the trypanasoma, at least they can not be demonstrated in the blood, either microscopically or by guinea pig inoculation two days or more after treatment. The control of this disease will materially advance the live stock industry in those tropical countries where mal de caderas prevails. This finding also suggests the possibility of controlling surra and other trypanosomiasis. In fact, Bolozet, Lavier, and Vehn report the successful treatment of a horse with dourine in which there was paresis of the hind quarters. Seven grams of Bayer 205 was given in this case and the horse was apparently normal seven weeks later and was used in military operations. These reports are interesting and no doubt reports from other investigators will soon be forthcoming.

Ergotism is quite prevalent in certain sections of the country. The extent of ergot infected rye, wheat and wild grasses is dependent upon abundant moisture and warm weather. Moderate wind facilitates the spread of the ergot spores and sclerotia and thus grains and grasses in distant fields become infected. In some fields 50 per cent or more of the heads of wheat or rye are ergotized and such grain is dangerous to feed to animals. Ergotism has been relatively common in cattle and swine in certain areas in the north central states during the last few years. The principal source of the ergot is in the chaff of straw piles. The ergotized grain being light is blown over with the chaff. It is dangerous to feed straw, either rye or wheat, when there has been much ergot in the grain. The danger is reduced by removing the chaff which contains the bulk of the ergot. It may be necessary to burn the straw from certain fields and it has been deemed advisable in some instances to burn hay that contains a relatively large percentage of ergotized wild rye.

Crew reported an interesting study in intersexuality or sex reversal in the fowl in the proceedings of the Royal Society, series B, No. 95. The study includes an investigation and description of the anatomy of the genitals of eight fowls that had been more or less completely transformed from females into males. In the group of birds studied was one hen that had laid eggs and hatched chickens but in later life was gradually transformed and was capable of fertilizing the eggs of another hen when mated with her. This report is of considerable interest and it has been suggested that the apparent sex reversal was due to some change in internal secretions but no one has suggested the reason for a change or the nature of the change in internal secretions that would bring about a reversal of sex. Was the original normal animal dual sexed; that is, one that possessed fully developed male and female reproductive organs? Will it be possible to alter the internal secretions by some artificial means and intensify or diminish sex characteristics or entirely unsex distinctly male or female animals? Such investigations are not only interesting but also important because of the acquisition and dissemination of more definite knowledge of essential functions of the animal body.

The early history of jack stock and mules of the United States is interesting not only from the viewpoint of history alone but also because of the fact that it typifies the broadminded early day breeders that builded a firm foundation for the present mule industry. Columbus brought mules to America in 1493 and they were disseminated westward in the southern part of the present United States and Mexico, probably as far as the Colorado river. Although selective breeding of these animals in the western Hemisphere dates from 1785 when Washington was presented with two jennets and a jack by the king of Spain, and in 1786 LaFayette sent him a jack and two jennets from Malta Island. The influence of these two jacks and four jennets was far reaching and was a stimulus to better sires and created a demand for future importations of jack stock.

From colonial days to about 1850 draft work was practically all done by oxen. Horses were used for riding and for pack animals. The breeding of horses and mules was stimulated by a series of inventions (mowing machine, reaper, plow, threshing machine) from 1820-1850. Some time between 1820 and 1830 Kentucky began to import jack stock from Europe. A marked increase in the size of jack stock and mules was produced between 1840-1850 by the breeding of jennets sired by Mammoth, an imported jack, to Warrior, a jack that had been brought to Kentucky from Maryland. Jack stock from this combination was some of the earliest breeding stock introduced into Missouri.

The mule is recognized as one of the important agricultural assets of the United States. The cotton producer and the sugar cane planter depend almost entirely upon the mule as a draft animal. Mules are used quite extensively in mines and they are an important adjunct in war.

A tablespoonful of castor oil once daily to dogs, a teaspoonful for small dogs, will often cure a chronic diarrhea within a week.

Castor oil is probably the most effective and harmless cathartic for emptying the intestinal tract of the dog completely at a single dose. It is difficult to give an overdose, since its action is due to saponification by the pancreatic juice, and only as much is saponified as there is castor oil available. The unsaponified oil, if any, is evacuated with the intestinal contents facilitating the movement.

There are three reasons why nanny goats refuse to own their kids. First, being poor and producing little or no milk; second, being forced to kid in a crowded pen; and third, rough handling. To prevent non-ownership nannies should be kept in fair condition and provided comfortable space for kidding. Some goat men claim that it is necessary to keep a nanny and her kid in confinement for 36 hours to insure the nanny mothering the kid. A nanny can be made to adopt a kid by confining the nanny and the kid in a small, well-bedded pen, although it may be necessary to tie the nanny for the first sucking.

The following questions are causing considerable discussion; what is your opinion?

1. Will the administration of hog cholera virus, three days or more after the administration of anti-hog cholera serum, produce a reaction, and an active immunity?
2. Is it possible to permanently immunize suckling pigs against hog cholera by the injection of hog cholera virus?
3. Is there a difference in the duration of immunity in pigs that have been treated with serum and virus that are kept in sanitary quarters and those that are maintained in unsanitary lots and sheds?
4. What is the cause of orchitis in boar pigs that have been injected in the axillary space with anti-hog cholera serum and in the thigh with virus?

Forward answers and discussions to Veterinary Medicine.

Of 50,039 calves under six months of age in infected herds that were tested by the Bureau of Animal Industry, in co-operation with the sanitary boards of various states, 1,564 reacted to the test. It has generally been assumed that tuberculosis was not prevalent in young calves but the above indicates that over three per cent of calves react and it is very probable that the majority of these cases are due to infection after calving rather than intrauterine infection or inheritance of the malady. This high per cent of tuberculous calves in infected herds is further proof of the necessity of elimination of tuberculous animals for breeding purposes. In this relation it is of interest to note that approximately sixty per cent of tuberculous herds are rendered free of tuberculosis by one test provided the reactors are removed promptly and the premises cleaned and disinfected without delay.

Methods of Interesting High School Students in Veterinary Medicine*

By R. R. Dykstra, Kansas State Agricultural College, Manhattan, Kansas.

In a discussion of this matter it is my opinion that there are three points of prime importance to be considered:

The student,

Influence of local veterinary practitioner,

The attitude of the educational institution.

The Student

The first essential in a student is that he must be a young man having good health, and preferably with a strong physique. Morally he must be above reproach. The really desirable student should in addition be energetic, and a good mixer. In an experience extending over a good many years, we have definitely come to the conclusion that young men that have had previous experience with farm animals develop into better practitioners than those lacking this experience. The future veterinarian must have an inherent liking for domesticated animals. When the latter is fully developed, there is a sympathetic relationship which in the future practitioner's professional life will on many occasions be of service to him in a way that is difficult to define. I am sure that all of us have heard the expression that a certain man "understands" animals and therefore his success in dealing with them. Probably this may be explained in a large measure by the fact that the strong liking existing for animals develops a desire to do things for them that is not present in anyone having but a very general feeling towards his patients. This is a rule that applies in all vocations. We always do better in those things in which we are intensely interested.

Experience has taught us, not only in the veterinary profession but in others as well, that an important requirement of success is a thorough understanding of general fundamental educational principles. In former times the need for veterinarians was so very acute that students were taken into colleges without the necessary preliminary education. It is really remarkable, and to the credit of the schools of that day, that they were successful in educating men having but a poor general education, though remarkably successful in their chosen profession. The teachers of the institutions of that day were strongly imbued with the idea of service. This they were able to impart to their students so that whatever the latter lacked in educational fundamentals they more than made up in the enthusiasm with which they approached every new phase of their professional work. Today the need for veterinary practitioners is not nearly so acute and with the approach of this period the profession recognizes that the future veterinarian must be better prepared. It was with this idea in view that all recognized veterinary colleges now demand that veterinary matriculants shall have completed a high school course or its equivalent. Most veterinary schools go still farther in that they outline the nature of the student's high school work. Young men thus prepared are better able to grasp the highly technical and professional subjects presented to them during their college course. There has been some talk that the entrance requirements should be made to include at least two years of a collegiate course, before the professional subjects are commenced.

The high school training now required has in addition to the better scholastic preparation of the student, made him when he finally completes the veterinary curriculum, more of the strictly professional type Whether this is in the nature of an advancement or retrogression is still to be demonstrated. That many of these young men are better able to hold their own socially is evidenced by the fact that much less than formerly is the veterinary profession an excuse for social ostracism of those engaged in it.

Influence of the Local Veterinary Practitioner

The writer has made it a practice for a number of years extending over a rather extensive experience with students to inquire of matriculants the reason for selecting the veterinary curriculum as the best suited to prepare them for life's vocation. In a very large percentage of cases the reply has been that the chief influence was the local practitioner from the matriculant's home. If some local practitioners have such an influence over young men that the latter want to follow in their footsteps, then why is it that other practitioners do not so seem to influence the young men of their ac-

* Presented at midsummer meeting of the Oklahoma State Veterinary Medical Association.

quaintance? The answer to this question is rather a large one.

The desire to emulate an older person is due very largely because the older person represents an ideal in the mind of the younger one. If therefore a veterinary practitioner is a man of outstanding personality, he is bound to attract attention to himself. The high school graduate of today does not turn very strongly to a practitioner that takes no pride in his personal appearance or to a practitioner that has as his associates men of low standing in the community. The neat appearing, aggressive, professional man with a keen interest in community affairs as exhibited by membership in civic, church and fraternal organizations, with a strong desire to be of service to the community in which he resides, a service of an unselfish nature, is bound to attract attention to himself.

Furthermore, the veterinarian who is constantly leading the fight from a strongly professional standpoint to better living conditions in his community, either by calling attention to the desirability of adequate milk, meat or dairy inspection, or still further by calling attention in more or less pointed articles in the local press to the need for improvement in sanitary surroundings, is bound to be looked upon as a leader in that community.

Having thus focused attention upon himself by certain general characteristics mentioned in the preceding paragraph, the prospective student will probably look into the nature of the more strictly professional side of his idealist. If the prospective student finds that the practitioner, instead of being located in a building correctly spoken of as a barn, has a neat hospital with office and operating rooms properly equipped and the entire place giving forth that appearance of sanitation which should be the goal of every practitioner, it will still further influence and attract the young man.

Perhaps of all the desirable attributes in a practitioner as a guide for a young man, the character of the practitioner's work is outstanding. Time and again have we noticed on the faces of young men thinking seriously of taking up the profession of veterinary medicine as a life work the look of utter disgust upon seeing an otherwise highly qualified practitioner approach a surgical operation in a measure that could scarcely be characterized as either humane or professional. Performing a major surgical operation upon an animal without the use of an anesthetic simply because the practitioner has it in his power to enforce his will upon his patient is not conducive to impress the prospective student with high ethical standards of the profession he is thinking of entering. On the other hand will be admiration and desire for emulation of the practitioner who performs an operation in a truly artistic manner. By "artistic" we mean a patient properly confined and anesthetized; an operative area neatly shaved and disinfected; instruments clean and sterilized, and the operator dressed in neat, clean clothing. Can we expect a future student to be strongly impressed in any way that you care to take it, with the ability and characteristics of a man dressed for what should be a careful surgical operation, in a blue, dirty, filthy overall? I know that there is a tendency, fortunately a very rare one, and becoming more rare every year, for some practitioners of today to present an appearance that is everything but that of a high class professional man. I also know that as an excuse for this lack of personal appearance there is a tendency to say that such things are all right in carefully appointed veterinary hospitals, but impossible to carry out in a country practice. In refuting such an argument I should like to call attention to the fact that some of our really successful veterinary practitioners engaged in extensive general country practice, make it a point to be clean and professional appearing at all times. I have in mind a specific instance where two graduates located in the same town. One of the two was inclined to be a little careless about his personal appearance. The other one told me, after he had been out of school a year, that he was going to persist in wearing clean white suits whenever he was called upon to do an operation. This latter young man by that resolve probably gave an insight into his strong desire to do high class work in every way. The result today, and it is now almost ten years ago since the young men left school, is that he of the white suits is a leader, while the other one is a second rater.

The time has passed when the general practitioner of veterinary medicine can afford to get along without a microscope. The diagnosis of animal diseases has become such an intricate problem that for anyone to attempt to do this by a dependence upon his unaided physical senses is absolutely futile. Furthermore, the microscope, an instrument of unquestioned value, has a certain charm for a young man in the process of selecting his life's vocation. A microscope, some slides, bottles filled with reagents, test tubes, a sterilizer, an incubator, etc., as regular hospital equipment, impresses not

Veterinary Hall, Kansas State Agricultural College

only the future prospective student but the practitioner's clients as well. A certain veterinarian of the writer's acquaintance enjoys the highest professional standing in his particular town, because not only does he do all his own routine diagnostic work, but he also does this for the practitioners of human medicine in his town. The people living in that community know this and they have rather adopted the attitude of mind that before a human practitioner of that community can diagnose a difficult case, he must consult the veterinarian. Of course this attitude of the people of that town is far fetched, but it illustrates very nicely the influence exerted by proper laboratory equipment.

If therefore our prospective student, owing to the good influence exerted by his friend the local practitioner, has reached the point where he is seriously considering veterinary medicine as a life's vocation, it then becomes incumbent upon the practitioner to fully explain to the young man the burdens, pitfalls, and undesirable features, as well as the desirable ones.

The young man who has decided to become a veterinarian simply because he is charmed by the brilliant work, neat appearance or office equipment of his idealist, may possibly be disappointed when he actually has enrolled as a veterinary student and has started his career. Nothing is so unsatisfactory and so likely to result in failure as a disgruntled student. Years ago when the writer lacked some of the experience that has come to him through years of contact with students, it was frequently his custom to advise students strongly against changing from a course in veterinary medicine to some other college course. In the light of our present knowledge, if a student has entered upon a course in veterinary medicine and then finds that another college course is more to his liking, we talk the matter over with him carefully, try to advise him in the best way possible, but never make the mistake of trying to make him remain a veterinary student against his will. Occasionally such students leave the veterinary course to take another one, because "the distant hills always appear the greenest," but in the course of time there is an awakening and the young man is again enrolled as a veterinary student.

Most young men possessing all the other desirable qualities enter the veterinary profession because they believe they see in it an opportunity for financial gain acquired in a manner most pleasant to themselves and at the same time because of the opportunity for great service. It should be impressed upon every prospective veterinary student that if he enters the veterinary profession with the sole idea in mind of becoming financially independent or affluent, he will undoubtedly be bitterly disappointed. However, a young man in the veterinary profession, if he is careful in his outside investments, may attain a certain degree of financial independence. The prospective student should be told of the days and nights of hard work, and of the undesirable conditions under which

he must frequently labor; the irregularity of his work, and that his future work from the financial standpoint will be very closely linked to the financial status of agriculture as a whole. If he is willing to assume such responsibilities, there is the promise of an independent professional existence. There will be days in the year when it will be a joy to go out on his professional rounds. He will have an opportunity to meet more people in a business way, to form closer contacts and friendships than men in almost any other profession. A candidate for a state office told me some time ago that if he could only get all the graduate veterinarians of the state to exert their influence for him, he did not believe there was a force in the state strong enough to prevent his election. It illustrates very nicely the influence that the veterinarian can exert.

The young man now fully understands the situation. He is fully convinced that he wants to be a veterinarian, and now the question arises as to where he can best prepare himself.

The Attitude of the Educational Institution

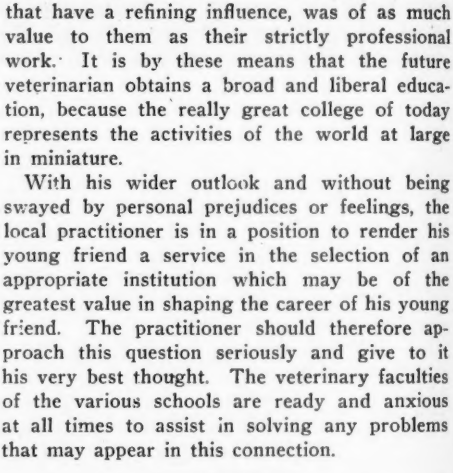
In the selection of a school the prospective student will undoubtedly consult the local practitioner. In advising the young man, the practitioner should bear several points in mind.

The writer believes that the young man should attend the school that is nearest to the point where he intends to locate as a practitioner. This advice is given because in a country as large as ours there are always diseases, ailments and conditions affecting farm animals that are peculiar to certain localities. By selecting the school closest to his future field of activity the young man will be very strictly drilled in the conditions affecting farm animals in his particular community.

The practitioner should recommend a school having a faculty of unquestioned ability, experience, and a general standard of high excellence. The young man is still in the formative period of his existence and the influence exerted upon him during his attendance at the institution of higher education should be of the very best, not only from the professional standpoint, but in every other way. The writer has sometimes prided himself upon being able to detect certain valuable characteristics in his professional brethren which also were paramount in an instructor of the institution from which the practitioner had graduated.

The equipment of the institution selected should be of the very best. This applies not only to buildings in which the surroundings will be congenial and conducive to scholastic endeavor, but to laboratory and technical equipment as well. The clinical facilities should be large, of a varied character, and so handled that the student may derive the greatest benefit from them. Because the student is in the formative period of his existence, he should be advised to go to an institution where all the influences are wholesome. The writer has been told many times by students that had completed the four-year course in veterinary medicine, that the very general influence, of a nature that they were not able to define, which they had obtained from their four years' attendance from participation in college politics, college social affairs, college literary societies, opportunities to hear distinguished speakers, to attend all those functions so common in college centers that have a refining influence, was of as much value to them as their strictly professional work. It is by these means that the future veterinarian obtains a broad and liberal education, because the really great college of today represents the activities of the world at large in miniature.

With his wider outlook and without being swayed by personal prejudices or feelings, the local practitioner is in a position to render his young friend a service in the selection of an appropriate institution which may be of the greatest value in shaping the career of his young friend. The practitioner should therefore approach this question seriously and give to it his very best thought. The veterinary faculties of the various schools are ready and anxious at all times to assist in solving any problems that may appear in this connection.



Dr. Clyde Waters, Tulsa, Okla., president of the Oklahoma association, after a fishing trip

Immunity to Bovine Infectious Abortion

By John M. Buck, Pathological Division, Bureau of Animal Industry,
U. S. Department of Agriculture, Washington, D. C.

The subject of immunity in connection with this disease seems to be of growing interest. The subcutaneous treatment of non-pregnant animals with living cultures or suspensions of the microorganism two months or more previous to the breeding of them, as practiced on a large scale by McFadyean and Stockman in England, has led other workers to study the efficacy of such a procedure. In view of the fact that many animals which acquire the disease under natural conditions remain carriers of the infection for years, one is inclined to form the impression immediately that, however the abortion losses may be influenced by the treatment, it would most assuredly increase the number of carriers of the causative infection. This view, if true, would certainly be cause for questioning its practical value. Our experience with such a vaccine, however, has failed to convince us that virgin heifers are commonly made permanent carriers of the disease by injecting them subcutaneously with generous amounts of physiological salt solution suspensions. The results of bi-monthly serum tests that were made of a number of heifers over a long period of time following vaccination, as well as other tests which were made, refuted rather than supported such a view. In the case of cows with functioning udders the possibility of causing permanent infection may be less remote. Our results up to the present time suggest that cows may be permanently infected by vaccination more readily than virgin heifers, but it is by no means certain that the treatment of non-pregnant cows commonly makes carriers of them. It may be that the results in this respect are determined to some degree by the virulence of the strains of organisms that are used in the preparation of the vaccine.

I question whether it is possible to render animals highly resistant to the infection by vaccination. Chronic diseases have never been very satisfactorily dealt with along these lines. The results obtained in our immunization experiments have, however, led us to believe that heifers by proper vaccination may be enabled to withstand an increased amount of Bact. abortus exposure without contracting the malady and that this method of dealing with the disease may frequently be used to advantage in infected herds.

We should guard against entertaining the impression that vaccination in a large measure solves the problem of abortion control. We have little or no evidence for assuming that through vaccination the carriers of Bact. abortus derive benefit. We have some cause for believing that the animal which has sustained an attack of the disease, and no longer carries the infection, is more resistant to reinfection than she could be rendered by vaccination. It does not seem wholly unreasonable, therefore, to suspect that its usefulness may be limited to animals giving negative results to the abortion test. Its use, moreover, should be confined to herds where the infection is definitely known to be present.

In my estimation vaccine treatment is a more logical and practical one for virgin heifers than unbred cows, not only because of being attended with less danger from the standpoint of causing their permanent infection, but because heifers in infected herds when near breeding age commonly give negative results to the serological tests. Inasmuch as the degree of immunity that may be engendered has given evidence of being relative rather than absolute, it is important that sanitary management of herds where vaccination is practiced be given consideration and the combination of these methods does not appear wholly illogical when we have some cause for believing that the vaccinated animal destroys the infection which is deposited in its tissues.

Immunizing agents other than vaccine for the prevention of abortion losses inspire little confidence on the part of investigators at the present time. Their popularity seems to have been acquired more from theorizing than experimental procedures. When subjected to tests so controlled as to furnish reliable information as to their efficacy, numerous investigators have reached the conclusion that the results obtained have not been sufficiently encouraging to compensate for the labor and expense involved in their administration.

Investigators of infectious abortion frequently refer to the disease as being self-limiting, meaning by this that animals acquire an immunity or tolerance to the infection that enables them to carry their calves the normal gestation period. It has been of interest to me to obtain

as much information as possible concerning different herds that have become infected with the view to becoming better informed as to why the malady is a much more serious matter in some herds than others, and why it exacts losses under different conditions for such variable periods of time.

It has been suspected that variations in virulence of different strains of the causative infection may have some influence upon this factor, although definite information relative thereto has been difficult to secure.

I have in mind at the present time two herds of nearly equal size that were subjected to the agglutination test at a time when the infection had seemed to have made but slight progress. The number of reactors to the test in each herd was comparatively small. Efforts were made to prevent the spread of the disease by separating the reactors from the non-reactors, but retaining them. When the agglutination test was applied to these herds some six months later, from half to two-thirds of the animals in each herd gave reactions of varying intensity indicating that the transference of infection had not been prevented by the segregation methods that were employed, or that the microorganism was dormant in many of the animals that gave negative reactions to the earlier tests. The two herds differed greatly in one respect at the time the original tests were applied. Few animals were pregnant in one, and few were non-pregnant in the other. The course which the disease has run in these two herds has been as unlike as could be imagined, although the method of handling them has not seemed to differ in any great degree.

The losses sustained by the one consisting largely of unbred animals at the time the infection was introduced have been surprisingly small. Comparatively few animals developed strongly positive reactions which suggests that although the disease spread widely throughout the herd, few carriers were produced.

In the herd where pregnant animals were more numerous, the losses have been extremely heavy over a period of five years. Cows have aborted repeatedly and have commonly acquired strongly positive serum reactions denoting the presence of udder infection. The herd which suffered the least serious consequences consisted entirely of pure bred animals, the other partly of grades.

These observations have suggested that in the event the abortion microorganism is going to be disseminated in a herd, it may be highly advantageous that its dissemination occur at a time when unbred animals predominate.

The histories of these two herds I regard as being of considerable importance because of the bearing they may have upon immunity and artificial immunization. Another feature observed in this connection is that when serological tests have been made at frequent intervals of unbred cows that were in contact with disseminators reactions have developed and disappeared in so brief an interval in some cases as to have easily escaped detection had the intervals between the tests been of considerable length.

It is observations of this character that have, to me, made the subject of artificial immunization attractive and that when considered in connection with the results of immunizing experiments have led me to believe that knowledge regarding the handling of the causative microorganism will in the course of time become sufficiently complete as to be of considerable practical value in dealing with the affection.

(This is the concluding installment of a series of six articles on bovine infectious abortion by Dr. John M. Buck.)

Contagious abortion is caused by a germ, described as the bacillus of Bang, gaining entrance to and growing in the womb. Abortion due to injuries such as horn thrusts, kicks, falls and the like is rare. The germ usually gains entrance to the body through ingestion of contaminated food and water. In the later months of pregnancy abortion is announced by swelling of the udder, congestion of the external genital organs, thickening of the milk, and a red-brown vaginal discharge. The calf is dropped before time. Abortion is often followed by retained afterbirth, resulting in inflammation of the womb and sterility. Remove the aborting cow from the herd to prevent contact with non-infected cattle. Avoid contaminated feed or litter. Remove and burn soiled litter, the calf and afterbirth. Disinfect stall and manger. Before returning the cow to the herd, flush daily with one per cent common salt solution until all discharges cease. No medicine or treatment has been found which will surely prevent abortion.—Hadley and Beach.

Remove large grubs in cattle by pressing the mouth of a bottle over the hole in the skin, or kill them by injecting a few drops of tincture of iodin through the hole.—Hadley and Beach.

India's Native Farriers

By George Cecil

Inexpensive Shoeing

Although India supports a few European horse-shoeing establishments, the "nal-bund" (which may be literally translated "shoe-binder") has the bulk of the business entirely in his hands. In Calcutta, Bombay and Madras there are two or three British, Indian or Eurasian firms which are ready to shoe horses at so much a visit, or to undertake the job for a certain monthly sum, say, three rupees. The well-to-do firms, being, perhaps, blessed with the Viceregal patronage and that of the Commander-in-Chief, endeavor to extract an extra rupee. As to the Eurasian blacksmith community, they work at about two-thirds of the sum demanded by their English brethren. There also are innumerable native farriers — the "nal-bund" proper—who are ready to shoe a horse for what they can get. They have been known to accept a rupee, and even less. In the event of a white man who is new to the country paying them double this sum, they are unremitting in their attention to business, with a view to securing future patronage.

Both the European and the colored blacksmith find it advisable to accede to the "sais's" (groom's) request for "backsheesh." Were they to decline to bribe him, he might, with a pair of pincers, remove the nails, thus causing the shoes to part company with the horse sooner than they would in the ordinary course of events. And they may do even worse, actually going the length of paring away an extra portion of the frog in order that the animal may fall lame. They argue that the "nal-bund" who is so ignorant of his work as to damage the horse entrusted to his care will not be looked upon with favor by the owner.

To Fit the Shoe!

In the up-country "stations" European blacksmiths are unknown. Consequently, the exiled owner of horseflesh is forced to indent upon the services of the "nal-bund." He frequently performs his work exceedingly well; upon other occasions he incurs the wrath of his employer, it being very difficult to make him understand that he must not cut away the whole of the toe. In self-defence the fellow contends that his father, grandfather, great-grandfather, great-great-grandfather—and so on ad infinitum—have been accustomed to preparing a horse's hoof in this manner. "Mera kussa, kya hai?" he will plaintively demand. ("In what respect am I at fault?") No power on earth will make a native understand that he is capable of doing wrong. He is a careless person, and, having the vaguest notions upon the subject of proportion, he cannot be induced to pare the hoof so that when shod one leg may be as long as the other. Two inches out make no difference to the dusky farrier. Indeed, so extraordinarily lax is he that, rather than make the shoe fit the hoof, he will cut the hoof to fit the shoe! As will be readily understood, his iniquities sometimes result in his being severely assaulted by those whose tempers are fired by long residence in the East.

For some extraordinary reason the work of the "nal-bund" is supposed to exactly last a month. Consequently, whether the Anglo-Indian's champing steed bears its master to the club or his "duftur" (office) half a dozen times in four weeks, or takes him there daily, the farrier puts in an appearance on the first of the month, being exceedingly grieved if there is no work for him. In fact, he may even upbraid the "sais," threatening to fine him part of his promised illicit commission.

"Buksheesh"

As will be readily understood, the head native groom employed in a large racing-stable may make a fair sum of money every year in "dustoori" (commission). Indeed, upon the arrival in a station of a British cavalry regiment noted for the racing studs owned by its officers, every "nal-bund" in the place hovers about the officers' bungalows for the purpose of securing the coveted appointment. And, to this end, they bribe the servants to put in a good word for them, and bombard the patron with "chits" (applications). These epistles are written by a "baboo" (a native clerk with a knowledge of English), and are, as may be supposed, of quaint construction. The following note was received by a major in an hussar regiment:

"Bangalore

Military Honorable Sir:

It has come to my notice that your Honour is a racer. So I will shoe, for your honour. I will charging rupees 3 a mensem, and my works is a. 1. 1st class. I have shod for all gentlemens in other regiments and I knowing good business. If your honour giving me try

I suits all right. So come along and see and I do all correct. Always praying for your Lordship's coming and achieved offsprings,

Your humble one,
BUDOO, Horse Shoe Man."

Thoughtless

But it is not only the British officer's shoeing which the "nal-bund" strives to obtain. He also is glad to secure that of other residents in the "station," and petitions the missionary element, the "collector" (a species of magistrate), the "commissioner," the "istunt sahib" (the native term for "assistant magistrate"), the opium "wallah" (a half-caste employed to weigh opium) and even wandering journalists who put up at the dak bungalow (hotel). Occasionally the "nal-bund" is so thoughtless as to apply for employment to a "sahib" who has on some previous occasion dispensed with his services in a summary manner.

When presenting himself to be paid his fee the "nal-bund" is clad in a colored turban and a coat and loose trousers of white linen, both of which are fairly clean. But when engaged in his avocations he retains only his head-dress and a wisp of cloth worn around his waist. The inferior grade of native blacksmith shoes the patient bullock, and is looked down upon by the "nal-bund," who has the honor of caring for, say, the steeds of a Rajah.

Helpful Hints in Equine Practice

By L. A. Merillat

PHLEBITIS OF THE JUGULAR

Inflammations of the jugular vein and its insidious, encroaching complications, are less known to the modern veterinarian than to those who practiced when phlebotomy was an everyday operation. That was before the days of asepsis, when almost all surgical wounds were inoculated with infected instruments. The veterinarians of the ante-Listerian era, and many after that time who ignored the laws of asepsis, were well acquainted with this fell disease. Venesection was a routine procedure for many afflictions in those days, and the reckless invasion of the jugular with the unclean fleams through the uncleansed skin followed by closure of the incision with a pin and tail hairs was fraught with danger. On the fourth day following the operation, the environs of the wound were found painful and slightly swollen along the jugular groove. Day after day the swelling advanced in both directions, but particularly upward and finally fluctuating abscesses inviting the lance developed here and there along the course of the swelling. When evacuated a copious bleeding often followed the discharge of pus and because the vein was choked up with inflammatory products below the seat of lancing, the hemorrhage was usually very difficult to control. The trend of the process was always decidedly toward the periphery, abscess after abscess would form, first along the jugular groove, then along the parotid region and finally within the cranial cavity. This final envolvement was fatal, the patient dying from abscess located in the venous sinuses of the brain. Besides this chronic course, phlebitis of the jugular occasionally killed the patient during the acute stage of the inflammation from acute septicemia and in rare cases from malignant edema and tetanus.

Today phlebitis of the jugular interests particularly those veterinarians who have a penchant for intravenous medication and, of course, those who still occasionally bleed for therapeutic purposes. And, furthermore, it is always worth a thought during the treatment of accidental wounds of the jugular and its larger radicals around the throat. Abscess of the venous sinuses of the brain has occurred in our practice following the lancing of retropharyngeal abscesses, in in one case it followed a punctured wound located just above the larynx. In both of the cases a large vein was accidentally opened and the purulent products which entered the perforation produced a succession of abscesses which finally reached the brain, and the patients succumbed from "blind staggers." Still another case which ended fatally was caused from an injection of tallianine into the jugular in the middle cervical region. Whether the syringe or the medicament was the carrier of the infection is not known, but four days after the treatment, the neck was swollen and the patient was very sick. The indisposition was at first attributed to the influenza for which the drug was given, but as the local phenomenon became more threatening and finally the center of the swelling burst and discharged a large amount of sanginous pus followed by copious bleeding that required packing to con-

trol, it was at once seen that the local and not the systemic disease must be reckoned with. It was at this stage I had the privilege to examine the patient and to announce the serious character of the trouble. By doing an aseptic ligation of the jugular at the level of the first ring of the trachea, we hoped to arrest the progress of the disease there, but in spite of this radical step, it pursued its relentless course unchecked and ended in the brain, as so many of these cases do.

Invasion of the jugular with the hypodermic syringe is therefore not an entirely innocent operation, nor can the reckless use of the fleams be countenanced today, because there is occasionally a sequel that makes up in seriousness what it may lack in frequency.

The prevention must be sought in the cleanliness of the syringe, the fleams, the skin and also in the product injected.

Aseptic ligation is only effectual as a check for the advancing process when it is done very early. In the advanced case, it is better to leave the vein work out its own salvation other than that of lancing ripe abscesses and draining them by irrigations or with gauze wicks.

ALVEOLAR CARCINOMA

The veterinarian must always be on the lookout for cancers in the mouths of horses. Patients affected with offensive emanations from the mouth and nose are often found to be affected with this disease. On examination of the mouth one, two or three superior molars are found black and loose and a granulating growth is seen extending along their buccal surface. At first only one molar may be affected, and one might at this early stage carelessly diagnose the trouble as simple alveolar periostitis. After extracting the affected molar, the cancerous process advances more rapidly and soon another one must be removed; later a third is found loose and is extracted. The alveolar cavities are now filled up with cauliflower granulations that bleed copiously when the patient wounds them in eating; the nose of the affected side discharges a bloody, stinking pus, and the skull below the eye bulges outward. Sooner or later the skull softens, the skin dissolves and the eyeball is attacked and the patient now presents the nasty picture that only cancer can produce.

The practitioner who does not diagnose these cases in a very early stage and extracts the teeth without having suspected the seriousness of the ailment, drops into an ugly pitfall. According to the owner's conviction, the disease dates back to the first extraction and the veterinarian, not having recognized the nature of the disorder, while, of course, blameless, has no good defense to offer. The only defense he can make is that the horse had cancer before the extraction, but he did not know it—an ugly confession. The moral is to look out for alveolar carcinoma when deliberating over ailments of the teeth and nose, especially of old horses.

COLLAR GALLS

Common galls of the collar seat are due to the rubbing off of the epiderm, partially or entirely. These are usually trivial matters if properly managed, but when neglected day after day as the horse is forced to work on, the dermis becomes bruised and infected and a more serious lesion is produced. The proper attention to a collar gall is, of course, rest, but in lieu of this, such expedients as drawing out the padding of the collar at the level of the sore or padding it above the sore, are often worth recommending.

It is, however, a fact that no changes of the collar are entirely satisfactory. The collar seems to rub the sore despite such attempts and not infrequently a sore develops at the new seat of pressure. A breast collar so often recommended for a horse affected with sore shoulders is a mighty poor substitute for a hame collar on a horse that must work hard. It generally causes breast sores that are more disabling than those on the shoulder. The best treatment for a simple gall is mercuric chlorid solution, one part to five hundred of water. This solution is rubbed briskly into the gall with pledgets of cotton at noon and at night. There are no astringent remedies that will equal this simple solution for a skin excoriation. In addition, the collar is well cleaned twice a day and at every opportunity during the day, the sweat is rinsed off the shoulder. When the dermis has become tumefied, there is no better remedy than common white lotion. A more popular wash for a veterinarian to prescribe as a general gall cure consists of methylene blue, one dram; tannic acid, one ounce, and denatured alcohol, one quart. This will dry up sore shoulders very fast and while by no means an adequate substitute for rest, the real cure, it usually gives good satisfaction.

Poisonous Plants

By L. H. Pammel

SWEET CLOVER BLOATING

In a recent number of Veterinary Medicine there is an account of sweet clover bloating. Several times this summer my attention was called to sweet clover bloating. No doubt the wet condition of the sweet clover had something to do with bloating of cattle. I, therefore, publish this interesting item from Dr. C. C. Steele, Treynor, Iowa:

"In this locality there were thousands of cattle died from bloating on sweet clover during the wet season of this year. The farmers here have discontinued the use of it as pasture for cattle. In my practice I have also had numerous cases of colon impaction in horses, caused from sweet clover pasture."

Bloating in case of cattle fed upon sweet clover has also been reported by Dr. Wm. Ray of Clark, South Dakota.

Examination of a Hereford which died after being placed on exclusively sweet clover pasture, showed ruptured bowel caused by bloat. Other instances occurred in the same neighborhood; some of the cattle were relieved by tapping.

Bloating from white clover is not uncommon in some sections of the country. This is especially liable to occur when the clover is wet. Wet sweet clover does not poison under ordinary circumstances.

MUCOR CORYMBIFER AFFECTS EYES OF HORSES

Dr. F. de M. Bertram of Newport, R. I., has had some cases wherein a mold (Mucor corymbifer) affected the eyes of horses. Some years ago a case of this trouble in man came under my observation. In my "Manual of Poisonous Plants" I have this item:

Pathogenic properties. Lichtheim recognized this species as pathogenic. It grows better at a temperature of blood. When introduced into the circulation of guinea pigs, it produces death in 48 to 72 hours. Mycelium is found in kidneys, spleen and Peyer's patches of intestines which are swollen and ulcerated. Huckel found the organism in the human ear. Dr. Wolffner, in Dr. Trelease's laboratory in St. Louis, Mo., cultivated the organism from the human eye. The clinical record of this case was as follows: A farmer, near St. Louis, was cutting corn with an old-fashioned corn knife. A small piece of corn stalk flew into his eye, later inflammation set in, followed by inability to see. Dr. Wolffner found a film over the surface. This film was removed and later Mucor corymbifer developed from it. It has been frequently found in ulcerated portions of the lungs, intestines, nasal cavity, and in the auditory canal. Dogs are immune.

The earliest recorded case of mucor in pneumonomycosis was made by Furbringer who had under observation three cases of a disease in two of which he found a Mucor. According to Dr. H. C. Plaut, the cases of otomycosis are not infrequent in India. According to Siebenmann it occurs in .5-1 per cent in all diseases of the ear, and males, especially farmers and gardeners, are more predisposed than females. According to Hatch and Row, ear mycosis is common in India, they having observed 22 cases in one month. The most common fungi found in the ear are Verticillium graphii, Aspergillus fumigatus, A. niger, and A. flavus. A. nidulans is somewhat rare, as is Mucor septatus. The Aspergilli will be treated more at length in another connection.

Many cases have since been reported. There is no doubt that these fungi are pathogenic.

NEW KIND OF POLLEN POISONING

The following item from the American Bee Journal, October, 1924, in regard to poisoning from pollen, will be of interest to the readers of Veterinary Medicine:

"I have certainly had my share of tribulation this spring, for besides dealing with the worst epidemic of swarming in many years, I have transferred 200 colonies to new deep-frame hives, and most of the time have been suffering from skin poisoning from some kind of pollen that the bees come into contact with, and in spite of the fact that I wore gloves all the time my hands and forearms were so sore that it was often difficult to work, while for about a week my face was so swollen that my eyes were nearly closed.

All this was accompanied by a maddening itching and smarting, especially at night, and I

have lost so much sleep that it leaves me in a worn-out condition.

Doctors' prescriptions seemed to have little effect, and I believe that the mixture of kerosene and vegetable oil that I smeared over my face, hands and arms at frequent intervals while at work prevented much fresh infection and thereby enabled me to keep on with the work that was so urgent.

It seems that this poison remains in the skin much longer than does that of poison oak, from which I have often been poisoned years ago.

My hands have been poisoned to some extent in this country each season, but never like this, before. H. E. Weisner, Tucson, Ariz.

(The above is a new thing to us. We have heard of some beekeepers being poisoned to a certain extent by the dust of dry propolis when scraping it from sections. But we have never heard of skin poisoning from pollen. Pollen from ragweeds (Ambrosia) causes hay fever in a great many people, by inhalation, but no skin irritation that we know of. It would be well to find out more about this pollen and its source.—Editor) American Bee Journal, October, 1924."

Hog Cholera Vaccination Difficulties Prevalent

By A. T. Kinsley

Generally speaking, swine have been unusually healthy during the summer and early fall of 1924. There have been relatively few outbreaks of cholera and they have been limited to small areas. Recently there have been several reports of so-called cholera breaks and other diseases in swine. There has not been the usual amount of vaccination against cholera this year and there will be a large amount of immature corn. These two factors have previously had an important bearing on losses of swine not only from cholera but also from other diseases. The occurrence of disease in swine regardless of the nature of the disease will result in an increased demand for vaccination against cholera and the veterinarian should prove his worth by a careful inspection and a correct diagnosis before treatment is prescribed.

Anti-hog-cholera serum is a specific for the prevention of hog cholera but is of no particular value in the prevention or treatment of other diseases. The fact that swine may become diseased after treating with serum and virus does not prove that either the serum or virus or both was at fault. Generally speaking, anti-hog-cholera serum and virus are more constant in potency and virulency than swine are in susceptibility and resistance. It is unfortunate that the occurrence of disease after vaccination has been designated "cholera break" Certain factors significant in the occurrence of disease after vaccination have been discussed previously but because of their importance, repetition is permissible. In our judgment, the most important factors in the so-called "cholera breaks" are as follows:

1. Swine not in proper condition when vaccinated.
2. Improper care after vaccination.
3. Swine diseased at time of vaccination.
4. Faulty technic of vaccinator.
5 Impotent serum.
6. Avirulent virus.

Condition Swine for Vaccination

The reaction following the injection of serum and virus in swine that are properly prepared is slight but if they are not properly prepared there may be excessive losses from cholera as a result of digestive derangements. Swine should be conditioned for immunization against cholera by restricting their diet for two or three days prior to vaccination and withholding all feed for from 12 to 24 hours before the operation. The ration should be limited to one-half or not to exceed two-thirds of the regular diet for ten days after vaccination. It is generally conceded that the principal losses of stock hogs that are vaccinated in public markets and shipped to country points are due to digestive derangements induced by over-feed.

Determine the Condition of the Swine Before Vaccinating

THE SUCCESSFUL PRACTITIONER CAREFULLY EXAMINES EVERY HERD OF SWINE PRIOR TO VACCINATION IN ORDER THAT HE MAY KNOW THEIR EXACT CONDITION WHEN THE SERUM AND VIRUS ARE INTRODUCED. HE WHO DOES NOT MAKE SUCH AN EXAMINATION CAN NOT KNOW THE CONDITION OF THE SWINE AND DIFFICULTIES SUCCEEDING SUCH VACCINATION ARE PRONE TO OCCUR.

An apparently healthy herd may be found to be diseased when the history is obtained and a

careful examination is made. Excessive losses have occurred in apparently healthy swine that were given anti-hog-cholera serum and virus on the supposition that they were healthy. Hog cholera in the incubation stage may not be recognized unless a careful examination is made. The administration of serum and virus in a herd in the incubation stage of cholera is good practice but it may be embarrassing to the practitioner to find losses due to cholera two to five days after simultaneously treating a supposedly healthy herd.

A herd of swine may be apparently healthy and a large percentage of them be affected with a mild chronic necrotic enteritis. The injection of anti-hog-cholera serum and virus into swine susceptible to cholera produces a reaction during which time the resistance to other infections, particularly necrotic enteritis, apparently is diminished. Thus, when swine affected with necrotic enteritis are simultaneously treated with serum and virus, the enteric disturbances become aggravated and the losses are usually excessive. The treating of swine simultaneously affected with necrotic enteritis and hog cholera with anti-hog-cholera serum and virus is permissible, but the injection of serum and virus into swine that are not infected or that have not been exposed to cholera but are affected with necrotic enteritis is not good practice, as unfavorable results are almost certain to follow. It is not advisable to inject anti-hog-cholera serum and virus into swine affected with any other disease than cholera, because of the apparent diminished resistance during the reaction incident to the immunization.

Care in Vaccination Necessary

Most practitioners have an efficient technic for the administration of anti-hog-cholera serum and virus; however, an occasional instance arises in which post-vaccination difficulties can be traced to faulty technic. The use of a contaminated syringe has resulted disastrously in a few cases. One practitioner used the same syringe for injecting anthrax spore vaccine and cholera virus and another used a needle for aspirating a malignant edema tumefaction and later for the injection of anti-hog-cholera serum, and it is evident that the results would be disastrous.

Losses Rarely Due to Impotent Serum or Avirulent Virus

It would be difficult, if possible, for any licensed serum company to market an impotent serum or avirulent virus, with the present regulations for the production of serum and virus. The injection of swine with virulent virus and an impotent serum will produce hog cholera in from seven to ten days. An avirulent virus when used in conjunction with a potent serum does not produce a reaction and the swine so treated acquire a passive immunity which is of relatively short duration, and swine so treated may later become affected with cholera. Generally speaking, anti-hog-cholera serum and virus are more constant in potency and virulency and therefore more dependable than the condition existing in swine when immunized.

From the foregoing it is evident, first, that certain conditions are requisite in the successful immunization of swine against cholera; second, that anti-hog-cholera serum and virus are dependable when obtained from a licensed establishment; and third, that there is a variety of diseases that may occur in swine. It is conceded that it is difficult to make a specific diagnosis of swine diseases. The following brief statements of history, symptoms and lesions of the most important diseases of swine are appended with the hope that they will be of some value to the readers of Veterinary Medicine:

Hog Cholera

Usually only a small percentage of the herd is affected in the beginning of an outbreak; a high temperature, inappetence and a tendency to hide in bedding are symptoms indicating hog cholera. Autopsy reveals congested and hemorrhagic lymph glands, petechial hemorrhages of lung, kidney, bladder and epiglottis.

Flu

High temperature, inappetence, tendency to remain in bedding. thumping, coughing, and a large portion of the herd simultaneously affected, are the usual symptoms of influenza. An acute inflammation of the anterior respiratory tract typifies influenza.

Necrotic Enteritis

Appetite fair to good, diarrhea, unthriftiness, emaciation and temperature 104-105° F., are the usual indications of infectious necrotic enteritis. Enteritis of varying intensity is the lesion that characterizes this disease.

Hemorrhagic Septicemia

Cough, nasal and ocular discharge, thumping, appetite fair and temperature up to 105° F., typify the pulmonary form of hemorrhagic septicemia. A typical catarrhal pneumonia, with or without pleurisy, is the lesion that characterizes this disease.

Swine Erysipelas

Diminished appetite, dullness, temperature 104 to 106° F.; may or may not show locomo-

tory disturbance; sloughing of tail or portion of ears. Autopsy findings reveal very large spleen, tumefied, edematous lymph glands that may or may not evidence necrosis.

Bronchoscopy and Esophagoscopy in Dogs and Cats

By J. G. Horning, D. V. M., and A. J. McKee, D. V. M., Houston, Texas.

From our experience in adapting this branch of human medicine to use for dog and cat work, covering a period of five years of temporary investigation and a concentrated investigation and practice for the last six months, we find that the possibilities are far beyond our early expectations. Due to the cost of the instruments, we were somewhat hampered in our early work, but by study and experiment we

Fig. 1

have adopted a working line of instruments for the small animal practitioner that is within reason.

For bronchoscopy the use of an infant's or child's bronchoscope will cover practically all the cases one has to handle. The instruments to be purchased are Chevalier Jackson's bronchoscope, made by Pilling and Son of Philadelphia, which can be purchased through any instrument supply house. These are furnished with lamps and carriers, one practice battery and battery cords which can also be used with the esophagoscope, and one Tucker's tack and pin forceps, all made by the same house. Other material needed is cleaning material, three coils and sponge holder, child's size, 56 cm. in length, and one bite block designed by Dr. Horning. With this equipment one will be able to handle most of the bronchoscopic work in hospital practice.

On dogs we use morphin sulphate, one-sixth of a grain to the pound body weight, and on cats, ether for anesthetizing. Dogs stand very large doses of morphin without any ill effects noticeable, and in some cases more than the dosage quoted above had to be given to get the desired degree of relaxation. In dogs shortly after the hypodermic administration of the morphin, the animal starts vomiting, emptying the stomach, and relaxation and stupor shortly follow. In some cases the larynx and trachea were painted with a solution of Butyn—Abbott, but this is not absolutely essential. In cats it would not be advisable to try any bronchoscopic work without previous practice on dogs, as when using ether for the anesthesia, quickness in operation plays a considerable factor in successful work. The cat is usually under the influence of the ether in from two to three minutes and relaxed sufficiently for the work in hand.

The animal is then placed in the dorsal recumbent position on the operating table and tied so there is no movement of the body and the head grasped by the assistant placing the left hand over the upper part of the muzzle and attaching a hemostat to the tongue, pulling forward and upward as in Fig. 1. By use of

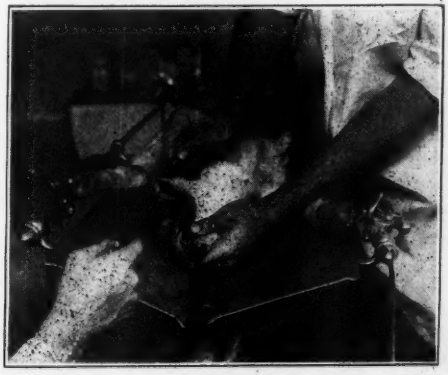


Fig. 2

the bite block which can be held on the index finger of the assistant's left hand and held in place, there is no possible chance of the animal damaging the instruments by clamping of the jaws. The operator then, if right handed, gets in position on the left side of the table, uses his left hand to assist in steadying the head and grasps the bronchoscope as shown in Fig. 1. With a light at the back of the operator or with the ordinary light in the operating room, when the assistant pulls the tongue forward and upward, the glottis is brought directly into

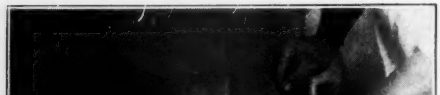


Fig. 3

view. The slanted end is then placed in the chink of the glottis and slips readily into the trachea. No great force has to be used.

The trachea can be recognized as an open tube, with whitish rings and an expiratory blast will be felt as soon as the entrance is made. Inspection of the trachea is made by moving the tube from side to side and up and down. Before entering the main bronchi the orifices of both should be inspected and identified as must also the carina which is a sharp, vertical spur at the distal end of the trachea from either side of which are the openings of the main bronchi. The tip of the bronchoscope should be turned towards the bronchus to be explored, the axis of the bronchoscope being made to correspond as nearly as possible to that of the bronchus. Practice at making the entrance to the trachea, inspection and entrance made into the bronchus desired and a thorough knowledge of the anatomy of the parts, give the operator confidence for the technic to be later employed in his work. Position of the tube in the trachea is shown in Fig. 2, and the position of tube and operator in making examinations is shown in Fig. 3.

Dogs have the faculty of discharging foreign bodies very readily from the air passages, in fact, more so than cats, so it is very seldom one is called upon for this work. But our best work has been in sponging of the bronchus in lung affections, using a one per cent acriflavine solution to moisten the sponge, which is made of sterile gauze, one inch wide by two inches in length. It is attached to the sponge holder, inserted and gently passed forward to the end of the scope, care being used that the exact measurement of the tube is marked on the sponge holder.

In a recent case we removed a small sliver of bone from the main right bronchus of an Airedale dog, the main symptom being the asthmatoid wheeze as described in Chevalier Jackson's book on bronchoscopy and esophagoscopy, published by Saunders. It would be advisable for anyone attempting this work to have this book as it has been of untold value to the writers in their exploration of this new field.

In our next article we will give case reports and the many uses for this work in our every day practice.

The medical practitioner of the future must frequently examine the man while he is apparently well, in order to detect any incipient departure from the normal, and to teach and urge modes of living conformable to the laws of personal health, and the public health authorities must see to it that the man's environment is in accordance with scientific teaching.

—Science

An emulsion of the salivary glands of mosquitoes agglutinates the red corpuscles of man, donkey, rabbit and dog. It has no such effect upon the blood of the mouse or guinea pig.

Guesswork ruled dairying until 1890. The invention of the Babcock test provided a simple, accurate method for measuring milk or cream. Until the invention of the Babcock test, it was commonly believed that 100 pounds of milk from one cow would make just as much butter or cheese as an equal amount from any other cow. Cows were valued for their bulk milk production. Quantity, not quality, counted.

Dr. Stephen Moulton Babcock, of the Wisconsin Agricultural Experiment Station, invented the test named for him and worked out the technic so perfectly that in twenty-four years there has not been an improvement in it.

Respiratory Diseases of Fowls Common in Winter and Early Spring

By B. F. Kaupp,* Chairman, Poultry Group, and Poultry Investigator and Pathologist, North Carolina State College, Raleigh.

Bronchitis a Common Ailment

Bronchitis is an inflammation of the lining membrane of the bronchial tubes, always more or less present in cases of pulmonary catarrh, accompanied by cough and coarse rales with more or less dyspnea.

It has been noted in cases of catarrh of the nasal chambers that the inflammation may extend down and involve the pharynx and trachea, and even to the bronchi. Sudden changes in weather, dampness, and roosting near a crack in the hen house so that a cold wind blows upon them, or, in fact, in any draft, are among the principal causes of bronchitis.

Coarse rales are noted and can often be heard before the bird is picked from the ground. This sound is caused by the air passing over the accumulating mucus. The bird may be seen to gasp for air by opening its mouth and the dyspnea may be so aggravated that the subject extends its head far up in the air as shown in the accompanying illustration. This difficulty in breathing is due to an accumulation of mucus in the air passages which partially closes them, thus preventing the bird from getting enough air into the lungs. The affected bird coughs, and there may be dullness and partial loss of appetite.

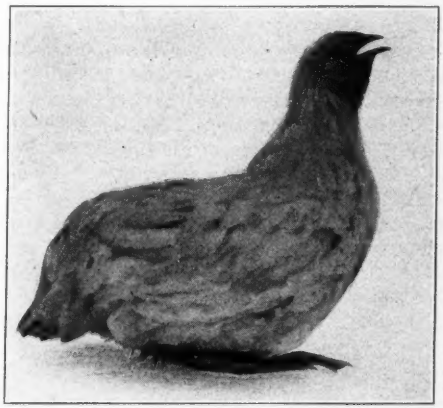
The condition may pass off in a few days, may respond to treatment, or may last for several weeks and end in recovery or in death. In the latter case there is marked emaciation; in the former the bird coughs up mucus for a long time, but otherwise appears well.

For treatment, give one-fourth teaspoonful of Epsom salts in drinking water or the water may be used to mix with mash. The bird may be given three-grain doses of quinin three times a day or twenty drops of aromatic spirits of ammonia every two hours.

Pneumonia May Develop

Pneumonia is an inflammation of the lungs or of the air vesicles and their supporting structure of the lungs. Acute broncho-pneumonia may develop and is one of the most common forms. During October and November of this year, this form has been exceedingly prevalent. Birds have been sent to the laboratory several times from one of the largest fattening establishments east of the Mississippi river. The following information was sent with one of these letters and shipment of sick birds:

"We have held postmortem examinations on a number of the birds affected, the same as the ones sent you, and in each instance have found the trachea filled with blood at the point where the trachea enters the body, or about two inches from the lungs. The lungs seem normal and the problem was to locate the cause of the blood in the trachea. This same disease has spread in the West and North and many feeding stations have been closed, as the death loss



A pullet with broncho-pneumonia.

was so heavy that large losses were taken by the operators. The disease seems to spread rapidly through a feeding station showing that it is contagious. We cannot account for the disease reaching this section. One of the operators here who sent you sick birds lost more than 2,600 head in ten days. They emptied their feeding station, thoroughly cleaned and disinfected everything in their house and without doubt had the cleanest and most sanitary house

*Author, Poultry Diseases (3rd ed.), Anatomy of the Domestic Fowl, Animal Parasites and Parasitic Diseases (4th ed.), Poultry Culture Sanitation and Hygiene (2nd ed.), Essentials of Poultry Raising.

the writer has seen. After cleaning, they took on a few birds and immediately found some of them affected, showing that the disease is coming from the country. In a feeding establishment it is impossible to run a hospital."

The accompanying illustration shows one of the above birds sent to the laboratory for diagnosis and study. It shows symptoms of coarse rales with great dyspnea and died during the night. The bird did not eat and showed an unkempt appearance of the feathers. On autopsy, well marked bronchitis and pneumonia were found.

Case Reports

About a year ago a Dark Cornish cock was brought to the hospital with, apparently, chronic bronchitis. The bird was given 5 c.c. flavisol subcutaneously and apparently improved after the dose. During the following months, especially during damp, rainy weather, the bronchial attacks would appear. Repeated doses apparently gave some relief but did not permanently cure him and on November 1st, the bird died in an attack. On opening the trachea, there were masses of cheesy pus-like material. The lungs were normal.

During October, at the state fair, a very valuable bird contracted an aggravated case of bronchitis. When first seen he was breathing with his mouth partly open. He appeared in the coop rather listless, eyes closed, and a complete loss of appetite. The bird had been winning first at all the fairs and the owner had refused $500.00 for him. He was a beautiful specimen of White Wyandotte. It was decided to try flavisol subcutaneously on this bird. He was given 5 c.c. at about 2 p. m. and on the following morning was well enough to win first prize again. He was given two more doses on successive days and made a complete recovery. On examining his throat there were noted diphtheritic patches. These patches were scraped and swabbed once a day with pure iodin and in three days were well.

Another case in a White Wyandotte pullet owned by Mr. A. of Virginia, was in the same show room. Her sister had developed acute bronchitis at the Richmond fair and had died in less than twenty-four hours. This pullet had also developed a sudden and very acute case of bronchitis. She presented a picture of great distress, with eyes closed, beak partially opened, great dyspnea, occasionally extending her head far into the air and gasping for breath. Coarse rales were distinct, and the general plumage was of an unkempt appearance. She did not eat or drink and she kept her eyes closed much of the time. The bird seemed near a state of collapse. About 3 p. m. she was given 5 c.c. flavisol subcutaneously and on the following morning her symptoms appeared about the same. She was given another 5 c.c. flavisol and on the following morning appeared much better and she was given a third dose of the same size and in the same manner. The following day the bird was well and it was impossible to distinguish her from her mates.

In pneumonia of birds there is likely to be a loss of appetite, with thirst, and constipation. The bird stands with head drawn, droopy wings, and ruffled feathers; breathing rapid and difficult There is also usually present a cough which apparently temporarily makes breathing somewhat easier only later to be as distressed as before. The discharge coughed up is a thick, adhesive mucus and may come from the nostrils. The bird stands off in a corner or on the perch pole and has every appearance of severe illness.

Very warm horses should not be allowed to drink their fill of cold water nor should they be given grain until they have cooled off somewhat.

Keep ewes about to lamb away from other stock. Provide warm, well-bedded quarters, exposed to the sun, allowing 12 to 16 square feet of space to an ewe. It is desirable to provide lambing pens for ewes whenever possible. These should be 4 by 4 feet or 4 by 6 feet. Both ewe and lamb should be kept in the lambing pen until the lamb is two or three days old.—Hadley and Beach.

Usually swine will take medicine with the feed or drink. Occasionally it is desired to administer drugs by means of a drench, in which case great care should be exercised, as many valuable animals are killed by improper drenching. To drench pigs, first have the attendant elevate the animal's head a little. If a rope or other soft material is put into the mouth, the pig, in an effort to expel the rope, will stop squealing and medicine can be given with a dose syringe or a funnel and rubber hose. The fluid should not be administered when the pig is squealing, as the windpipe is open and the medicine would be taken into the lungs and strangle the animal.—Hadley and Beach.

CIRRHOSIS OF LIVER IN AGED COW

On August 28th last, I was called to see a cow, aged nine years, belonging to a rancher. This cow was used as a family cow and had been given the tuberculin test every six months for four years with negative results.

History of the case: The animal had refused all food for eight days and had gone almost completely dry. This was the first time the cow had shown any symptoms of being ill. The temperature was 106° F.; visible mucous membranes, deep yellow in color; urine red; animal weak, would lie down most of the time; eyes sunken; tenderness on palpation over region of the liver; salivation.

Diagnosis, disease of the liver. Treatment, none. Prognosis, fatal.

On August 30th the owner called, saying the cow had died. An autopsy was held, and the liver was found enlarged, weighing thirty pounds, with chronic interstitial hepatitis, caseated centers (not tuberculous) from the size of a dime to an inch in diameter. The liver was attached to the diaphragm by adhesions.

J. E. Quinn, D. V. S.

Antioch, Cal.

RATTLESNAKE BITE IN COW

I had a rather unusual case a short time ago which might be of interest to others, and I am wondering how many have had similar cases and what they did for them. I got a very urgent call to attend a cow that had been bitten by a rattlesnake. Fortunately, I was close by, and probably not more than twenty minutes elapsed between the bite and my arrival on the scene.

The cow had been bitten in the left hind quarter of the udder from the rear, and about half way up. She had been bitten twice very close to the same spot. The snake was a whopper and had driven its fangs clear through into the milk secreting glands. This was a fresh cow in full milk. She was swollen badly at the point of contact and very lame and sensitive on that side, all this coming on during the twenty minutes previous to my arrival.

I at once injected 6 c.c. of mixed infection bacterin, scarified and cauterized the point of contact, then used "oodles" of potassium permanganate on the sore spot. I also kept the quarter milked out often. It gave clear blood for three or four days I also gave salts and sulphocarbolates, the carbolates in large quantities and also nux.

The next day I again used mixed infection bacterin. The cow was a little off for perhaps four days, when the milk cleared up. She began to eat fine and came back to full flow of milk with no bad effect in the quarter bitten.

I continued the permanganate treatment several times and kept up the nux. I might also mention that I used calcidin, 60 grains per day, until the milk cleared.

I don't know whether my line of treatment was any good or not. Anyhow the cow was returned to the herd sound and all O. K. in about a week. I should like to have suggestions or criticisms on my method of handling the case.

B. T. Hopkins, D. V. M.

Lake Worth, Fla.

RECURRENT PARALYSIS IN CASES OF MILK FEVER

About three months ago, I was called about fifteen miles from here to treat a registered Jersey cow with a three-day-old calf, the cow being down with a case of milk fever. On arrival, the owner told me that the cow was eleven years old and had always been a heavy milker but had never been sick before.

I inflated the cow's udder and gave a hypodermic injection of camphorated oil. In about three hours, the cow was up eating grass and seemed to be all right.

Yesterday, the owner called at my office and said that the cow had been down six times since then, that he inflated the udder and she would get up in an hour or so, would be off milk for a few days, then get back to normal again. About every two weeks the cow had one of these spells and would always respond to treatment, but seemed to be getting weak from the attacks, although she was in good flesh.

I should like to know if it isn't rather unusual for a cow to have this many attacks of milk fever. Or could it be some other condition causing this trouble? Also what line of treatment would be advisable?—C. H. D.

Reply by Dr. J. F. DeVine: Recurrent paralysis in cases of milk fever is not so uncommon in a large cattle practice, and any attempt at an explanation is purely hypothetical, excepting where one or more of the quarters are so affected as to interfere with proper inflation.

I gave my views on this question in a series of articles appearing in Veterinary Medicine in 1919. I also gave a formula we have been using for the past twelve or fourteen years and stated that in something over a thousand cases, we had not seen a single case of collapse under our method of medication. The formula referred to

is made up of fluid extracts of nux vomica, strophantus and digitalis.

This prescription is for the purpose of overcoming the disturbed circulation and acts as a heart stimulant and regulator. We begin such medication just as soon as there is evidence of consciousness returning, or immediately if the animal is not unconscious at the time we treat her.

The dose is repeated in one hour, and again in two hours, and again in three hours, if the condition warrants it.

Personally, I have just about as much faith in camphorated oil in treating milk fever as I would have in a hypodermic injection of cold water.

UNFAVORABLE SEQUEL OF METRITIS

I have had several cases of placentitis in cows with a resulting metritis. In most cases the metritis clears up nicely, but the appetite becomes depraved and finally the cows die. I have used every internal and uterine treatment with no avail.—G. E. H.

Reply: One wonders if the recovery mentioned is apparent rather than real; that is, the discharge may stop but the uterus fills with pus and enlarges to an enormous size, and subsequent symptoms are the result of this empyema and the resultant intoxication. An examination of the uterus made via the rectum would detect this. The treatment would consist in squeezing out any yellow bodies that may be persistent in the ovaries, the evacuation of the uterus and gentle massage. Dr. DeVine has discussed this subject fully in preceding issues.

—Ed.

LIVESTOCK IN SOUTH MENACED BY INTERNAL PARASITES

Although the eradication of the cattle tick in the Southern states is resulting in a rapid increase in meat and milk production in that region, other important work remains to be done before the livestock industry in those states can reach its best development, says Dr. B. H. Ransom, of the Bureau of Animal Industry, United States Department of Agriculture. Because of the climate, he says, internal parasites do relatively more damage there than in the colder parts of the country, and as the animal population increases, as a result of the elimination of the ticks, these other pests will do more and more damage.

Large amounts of money have been invested in the past 25 years by the Federal Government and the Southern states in tick work, which has been most successful, and to protect this investment, Dr. Ransom believes, it will be necessary to give increasing attention to a study of the problems arising from the presence of many internal parasites, including stomach worms, lung worms, and many kinds of intestinal worms.

The Bureau of Animal Industry has had conspicuous success in its investigations of certain internal parasites, notably the hookworm, and the roundworms or ascarids of swine. The very fact, however, that success has been attained in these fields has increased the routine work of the few men engaged upon research work to such an extent that it has been found impossible to carry on further research which is greatly needed. In other words, unless a successful research organization can grow, its success tends to destroy its original purpose, making it into an information and service organization to put into effect those discoveries already made.

The foregoing statement will explain the reason for the fact that little attention has been given to the study of many of the important parasites of farm animals while their destructiveness has been increasing.

TORSION OF UTERUS IN COW

I was called to a farm for obstetrics in a young Holstein cow. Upon arrival I immediately saw the animal had been given the "third degree" by the farmer, and I also saw his 30-30 rifle standing in a corner. Upon questioning, he said he had been working for about five hours with the cow and he knew there was no use calling me for if he could not get the calf, no one else could; but before shooting the animal, he was going to give the "vet" a chance.

Upon examination, I found that we were dealing with torsion of the uterus. The cow was so completely worn out with the handling she had received that I decided not to try reducing the torsion by introducing my hand into the vagina, nor by swinging or rolling her, for she had had enough torture.

I at once made an incision high in the right flank through the skin and separated the muscles and peritoneum just sufficient to introduce my arm. I grasped the gravid uterus and rotated it one complete revolution to reduce the torsion. The fetus was delivered and the incision sutured. The cow made an uneventful recovery.

I shall never spend much time again in the

rolling process, with elevating the cow's hind quarters, nor with any of the other like methods, for I believe the method described in the foregoing is easier on the veterinarian and patient. I am sure it is better for the owner, for this man is now a good client of mine.

Geo. W. Staggs, B. S., D. V. M.
Chehalis, Wash.

BOARD OF HEALTH WORK FOR VETERINARIANS

I think more veterinarians should try to get connected with boards of health in towns and cities. It would benefit them in more ways than one.

I have lots of work; for instance, take care of all milk, meat, water and food inspection that may be brought to me. I have a laboratory in which to take things when I cannot determine otherwise what the trouble is. We have a city of 23,000 inhabitants.

I look up all garbage, rubbish, dirty home and outhouse complaints; hang up all infectious disease signs, feed the families if necessary, fumigate homes after quarantine, take throat cultures of all diphtheria cases when time to release them, look up any and all complaints coming to the board regarding sanitation or quarantine. The secretary of the board, a physician, verifies all diagnoses and looks up complaints of infectious disease. I am called upon to trace all social diseases that are reported to the board.

It is now five years since I was appointed, after working hard for it. The administration did not want a part time man, but I explained my training, etc., and guaranteed to average five or six hours daily in the work. Being a veterinarian, I knew I was better fitted for the position than a layman.

I am at the hospital every day, in the laboratory. I meet all the physicians on common ground. They have the same regard for me as for other physicians; so do the sisters who run the hospital and the nurses. I believe we would elevate our profession a great deal if more veterinarians would try for these positions for which they are fitted. But the work is by no means all milk and honey. I have more grief than any other department, more neighborhood quarrels to patch up. I must go out at night and on holidays to put up signs when necessary. I have prosecuted several for not living up to the rules laid down by the state board. Most physicians would rather have this work taken off their shoulders, and I believe it is the place for the veterinarian.

Some cities have nurses to look after throat cultures and quarantines, while veterinarians take care of meat and milk inspection, but not so here. I must do the whole works, but I have plenty of time to carry on my practice. When I am not busy at practice I look up some of the complaints I leave accumulate for a week at a time, unless it is urgent. Even though my practice may be slack, I know a certain amount of money will come to me twice a month, which is some consolation.

I have held this position under two different political administrations. When the last administration went in, they wondered about this office, but all said I was the only man fitted for it. Other veterinarians can do the same. I know some of them do, but their work for the boards of health is confined mostly to meat and milk inspection. That is fine if the city is large enough.

A. J. Magrane, D. V. M.
Mishawaka, Ind. Sanitary Officer

FORAGE POISONING IN CALF

I was called to treat a year-old steer that had been weaned recently, at which time it was in good condition. About a week or ten days ago, this calf was put in the stable and fed sheaf oats and water. Yesterday the owner noticed the calf had refused to eat. This morning the animal was trembling. I saw him this afternoon when he was lying down stretched out. He would jerk his head back and forth, then would take a spasm, stretch out four feet, kick and strain violently, roll the white of the eye completely over and bellow as if in great agony. Temperature 103°; bowels inclined to diarrhea. I am completely puzzled by this case and should like some advice.—T. M.

Reply: Cases such as this have been seen in calves and diagnosed as forage poisoning due to moldy feed, to which calves, particularly after weaning, seem quite susceptible. In each instance, there were not many. Mold was found in the feed that appeared to be the causative agent. A case is recalled, however, in which the mold came very near to being missed. These were thrifty calves, much like the one described in the query, that belonged to a baker. They were fed a large quantity of bread soaked in skim milk, and some of the bread, not much of it, was frequently moldy. It was all bread that had not been sold, that is, that the baker had taken up from retailers in exchange for fresh bread.

From the information given in your case, one would be inclined to ascertain the quality of the sheaf oats fed. If the feed was moldy or even if only a part of it was spoiled, one would be inclined to incriminate it. If it was good and bright, we should look elsewhere for the trouble and possibly suspect that often convenient criminal hemorrhagic septicemia. Cattle are ordinarily very resistant to the deleterious effects of mold in the feed, and the writer is not sure that the observation that calves are quite susceptible to mold poisoning is borne out by the experience of others.

COW LOSES HER "CUD"

A client drove up to the office one evening and asked the question, "Can a cow lose her cud?"

Before I could give the usual explanation regarding loss of cud, this cow owner pulled out of his car a sure-enough cow's cud rolled up in a newspaper. The specimen consisted of placental membrane about the size of a baseball in which was mixed a small amount of grass.

The owner explained that the cow had calved in the pasture ten days before, and while the animal was standing in the barnyard that evening peacefully chewing her cud, he saw this cud fall out of the cow's mouth.

He had immediately hurried to my office to ascertain whether or not it would be necessary to replace the cud.

J. C. McCabe

West Liberty, Iowa

WHITE SOAP LINIMENT

The directions below tell how to make one of the best liniments known It is prepared without alcohol and is therefore inexpensive and will keep indefinitely without deteriorating. It can be applied with considerable friction without danger of blistering.

The base of the liniment is prepared as follows. Take of:

Ammonium carbonate	ounces 16
Powdered soap	ounces 16
Ammonia water	ounces 16
Oil of turpentine	ounces 16
Oleic acid	ounces 1
Water, q. s.	gallon 1

Dissolve the ammonium carbonate in a sufficient quantity of water. Then dissolve the soap in water with the aid of heat until a gelatinous mass results. Add the soap mixture to the solution of ammonium carbonate Then add sixteen ounces of ammonia water. Next add one ounce of oleic acid to one pint of oil of turpentine and add this solution to the soap mixture and shake vigorously.

The above will furnish a sufficient quantity of the base to make five gallons of white liniment. I find it easiest to divide the above one gallon of base into five equal parts, placing each part in a one-gallon bottle. I then add to each bottle one pint of ammonia water and one pint of oil of turpentine in which there is dissolved one ounce of oleic acid. Finally add sufficient water to make one gallon.

If a thinner liniment is desired use a smaller quantity of oleic acid and if a thicker, use a larger quantity.—Frank E. Lentz, Univ. of Pennsylvania Bulletin, Veterinary Extension Quarterly.

RAISING FALLEN HORSE WITH ROPE

You are publishing a very good and satisfactory journal that is full of good, practical advice. I have learned much from it. Being a city veterinarian, I am interested mostly in horses. I was about the last to drive a horse in daily practice, in which I have been engaged since 1887. Dogs come second with me for pecuniary reasons only.

An article published in Veterinary Medicine some years ago on how to hoist a horse with a rope instead of a sling, was worth more to me than the journal will ever cost me. I think for the sake of your new subscribers, this article should be published at least once a year.

Charles Williams, V. M. D.

Philadelphia, Pa.

Comment: The article referred to appeared in the October, 1916, issue of Veterinary Medicine and was written by Dr. A. C. Wight, then of Carnegie, Pa., and now in the army veterinary service. The directions given for raising a horse were as follows:

The only articles required are a block and tackle of sufficient strength to raise the horse, and thirty feet or more of rope, one-half inch or more in thickness. These items can be easily procured anywhere. The block is fastened to the ceiling or any other place above the horse in the usual manner.

The rope is handled as follows, first being doubled:

1. Pass the doubled end of the rope over the head backward to where the collar rests on the neck.

2. Pass free ends of the rope between the front legs, crossing it once, just before it goes between the legs.

3. Pass lower rope under body, so that it emerges just posterior to the withers.

4. Lay upper rope over thorax, so as to cross lower rope at this point.

5. Bring lower rope over body and between hind legs.

6. Pass upper rope under body in a position to correspond to the other rope, bringing it back between the hind legs. Cross the ropes at this point.

7. Bring both ropes up over buttocks, one on each side of the tail.

8. Pass forward along the spinal column under the ropes where they cross on the back, and tie to point where the rope lies on the top of the neck.

9. Insert hook of block at point where the ropes passing over the back cross, being careful to engage all the ropes at this point, namely, the single strands crossing to go between the hind limbs and the double strand coming from each side of the tail to the neck.

All ropes should be drawn as tightly as possible before the knot is tied, so that all slack is taken up.

The sling is very easily applied (one man can do it in a pinch) and the horse in his struggles cannot fall out of it. The body is always right side up, neither end higher than the other, and the feet are always in a position so that they can be utilized to the best advantage. Contrary to this, a sling is hard to apply, it requiring considerable strength to pass a canvas under a horse; the accessory harness cannot be easily adjusted; in the process of raising, the horse will lunge and fall out or turn on his side; and, furthermore, as is not the case with the rope sling, the broad belly-band of canvas so constricts the thorax that in case the horse does not at once attempt to use his legs, he must be let down for fear of suffocation. This fear of suffocation is one objection to the use of the chain block, which is slow in its action, whereas with the rope sling, this feature can be disregarded, as the ropes do not constrict the lungs sufficiently to produce suffocation. I had one horse which hung for forty minutes before he decided to stand up, without appreciable discomfort to the respiration.

Once the practitioner tries this method, he will nevermore use his sling for this procedure, but will raise the horse in half the time, and with a minimum of discomfort, both to the horse and to himself.

NERVE ANASTOMOSIS IN THE TREATMENT OF "ROARING"

Some time before the War the effect of anastomosing the recurrent nerve to the vagus for the relief of laryngeal paralysis had been tried by Sir Charles Ballance, though without success. This failure directed the attention of the experimenters to linking the recurrent with the descendens noni nerve (a branch of the lingual), but again success was not obtained. In both these cases stimulation of the main trunk above the junction resulted in active abduction of the vocal cord, proving that impulses were capable of being conducted through the anastomosis. As a result Sir Charles Ballance tells us: "A remarkable change occurred in the appearance of the previously paralyzed vocal cord; the inner border of the immobile cord was no longer concave and slack. It had regained tone and become straight and tense."

This recovery of tone in the vocal cord was a distinct gain, but the failure to produce abduction of the arytenoid cartilage led to other nerves being considered as a source of supply, and after due consideration the phrenic was selected for experiment. Four months after uniting the recurrent to the phrenic, both vocal cords moved equally in tranquil respiration. In six months the once paralyzed cord moved more strongly than its fellow, and seven months after the operation the movement of the regenerated cord during respiration was "excessive, almost violent." Sir Charles Ballance says of this result: "You can imagine the feelings of Mr. Colledge (a co-worker) and myself when we first saw the movements of the vocal cords taking place in a normal manner, and we knew that the experiment was successful." He then points out that the over vigorous movements of the cord were due to employing the whole of the phrenic nerve in the anastomosis instead of a part of it. Nerve impulses sufficient in strength to contract one-half of the diaphragm were poured into one-half of the larynx, and he accordingly says that the amount of nerve to be employed in order to furnish normal impulses to the dilator muscle of the larynx has yet to be decided

The conclusion is that recurrent laryngeal paralysis is curable by anastomosing the degenerated nerve with the trunk or one of the roots of the phrenic nerve.

The employment of the phrenic nerve for enervating a paralyzed larynx looks like bringing to a successful issue the operation of nerve anastomosis for the cure of "roaring," intro-

duced many years ago by Major-General Sir Frederick Smith. It is evident that the spinal accessory nerve which he united to the larynx could not supply sufficient nerve impulses. The main trunk of the phrenic, as employed by Sir Charles Ballance, supplies too much. It cannot now be long before the question is satisfactorily settled.—The Veterinary Record.

SWELLING FOLLOWING SWEENY TREATMENT

About eight weeks ago, I injected a sweeny on a four-year-old mare, Western type, and an abscess developed, which I drained, and now a hard swelling exists there, about eight inches long, at about the middle of the scapula. It seems to be sensitive when the collar is in place and the animal pulls. What treatment should I undertake to do away with the swelling? I attribute it to injury to the periosteum of the scapula from the needle.—W. F. W.

Reply: If the swelling shows no tendency to break down and suppurate, one would judge that it consists of a proliferation of fibrous tissue, the result of a subacute inflammation. The treatment would consist of the application of stimulating liniments, of which tincture of iodin might very profitably be a part, and plenty of friction and massage. Time and rest will probably also be necessary. And, of course, all irritation from the collar must be avoided. If the animal must be worked, and this will probably not hinder the recovery, use a breast collar.

EXUBERANT GRANULATION IN COLT

I have been treating a colt (one year old) which was kicked between the hock and fetlock joint. Granulation grew up in an oblong shape between these points. I have cut it off, also burnt it with caustic potash and butter of antimony, but it still continues to grow. I should like some advice as to what can be done to clean the granulation and restore healing.

T. M., Ontario

Reply: From the description given, this may possibly have taken on somewhat the character of a summer sore, if you have summer sores as far north as Ontario, and now that cool weather is here, it may heal more readily than during the summer. It is suggested that the excess flesh be removed with a hot iron or perhaps better still with some caustic that will make a very firm, hard scar and will to some extent permit healing under it as it detaches. For this purpose, one would suggest mercuric chlorid, which can safely be used by anointing the surrounding parts very heavily with a hard vaselin that will not melt and run off readily from the warmth of the leg when it is bandaged. Sift mercuric chlorid powder into absorbent cotton and work it into the cotton until the cotton has taken up all that it will hold, and then bind this rather firmly on the granulation and leave it there for a matter of twenty-four to forty-eight hours. It will form a dense, hard scar that will probably be a week to ten days in loosening. When it comes off, dust the place regularly with an astringent desiccating powder consisting of air slaked lime, three parts, and powdered alum, one part.

A CASE OF PROLONGED GESTATION IN A MARE

The subject of this note was a Clydesdale filly, three years old, and due to foal on June 5th, 1921. She had been in good health until the day when I first saw her, May 29th, 1921. All that morning while in the field, she showed signs of pain, so that the owner thought labor was beginning, though the appearance of the external genitals gave no indication that foaling was imminent. Exploration of the vagina caused some straining, but the cervix was quite contracted. Temperature was normal, pulse 72, and respirations were hurried. The mare was put in a loose box, clothed, and treated with stimulants.

During the two days following, though signs of pain were no longer apparent, the patient was in a very critical state, refusing food and water, passing no feces, sweating at the flanks, trembling, and much disinclined to move. After a time the trembling ceased, and was followed by a spasmodic twitching of the quarter muscles that caused the mare to dip her hind quarters in a manner reminiscent of a dog suffering from chorea. The temperature rose to 103 F., the pulse, at its highest was 110, and respirations were about 40. Stimulants were continued, and linseed oil given.

On June 1st the bowels began to move, and free purging soon took place. The animal's condition improved rapidly, and on the 4th, one day before her book-time for foaling, I left her, comfortably well. I had explored the vagina every day, but the cervix remained closed.

I heard nothing more of the case until early in December, when I was again called to see the mare, and I learned that she had never foaled at all. She had been at grass all through the summer and autumn, feeding well and keeping healthy, but gradually losing flesh, with the

abdomen considerably distended. The day before my visit she had shown at intervals some dull pain, which continued with remissions for several days, unaccompanied, however, by any other serious symptoms. Again stimulants were given, and a waiting policy adopted. I suggested to the owner that he might break the mare in to work.

I saw her occasionally between then and March 8th of the following year. During that time she became progressively thinner and the abdominal distention appeared to increase. Rectal exploration confirmed the presence of a fetus, and it was determined to try if delivery could be effected, the mare by this time being quite valueless, though, apart from her ill condition she seemed in good health. Unsuccessfully I attempted to force a way through the cervix uteri; it remained closed, and I merely succeeded in pushing my hand through the roof of the vagina. Feeling along the peritoneal surface of the womb, I found the walls curiously inelastic to touch, and very friable. I advised the owner to have the mare destroyed.

At the post-mortem examination, when the abdomen was opened, an enormous quantity of blood-stained fluid escaped. The uterus was chocolate-colored, and adhering at parts to the abdominal wall, liver, spleen and diaphragm. The wall of the uterus was about three-fourths of an inch thick, and practically no fluid was contained within it. There was a female foal, completely developed and preserved, and in no way swollen, with a good coat of hair, denuded a little on one elbow and stifle where it rested on the dry wall of the womb; the bones of the fetus were quite firm, the hoofs strong and hard; all the pre-molar teeth were through the gums. The fetus weighed 112 pounds.

Assuming the owner to be right in his estimate that this mare should foal on or about June 5th, 1921, it will be seen that she actually carried the foal for twenty months. And there is little likelihood of error in his estimate, for another mare on the same farm was due to foal on the same day, and in fact did foal normally within a few days of it

What is the explanation of this very prolonged gestation? I surmise that the condition affecting the mare when I first saw her was a metro-peritonitis, causing either paralysis of nerve endings in the uterus, or degeneration of the muscular coat, and so preventing the contractions taking place that would have resulted in expulsion of the fetus.—Donald Campbell, M. R. C. V. S., in The Veterinary Record.

FEEDING YOUNG HORSES

I have charge of a small farm devoted to the breeding of mules and ponies and should like some information regarding the raising of these animals on economical principles.—R. C., India.

Reply by Wayne Dinsmore: First and foremost, young growing animals, whether ponies or mules, should be allowed to run out on good pasture as much of the year as weather conditions will permit. Foals, whether ponies or mules, the first six months need no grain if forage is abundant enough to insure plenty of milk on the part of the dams. Shortly before the colts are to be weaned, however, they should be given some crushed oats with bran or other grains equivalent thereto and should be taught to eat before being weaned. After they are weaned, they should have one-half pound of grain for every 100 pounds they weigh. In other words, if a colt weighs 800 pounds it should have four pounds of grain per day in addition to good pasturage, and a liberal allowance of hay, preferably clover, alfalfa, vetch or legume, as leguminous hays are higher in bone building material which is needed for the bones of young growing animals. The same general treatment should be pursued from the time the colts are twelve months old until they are thirty-six months of age, although if pasturage is very abundant, they need not have grain during the best pasture months.

MERCUROCHROME IN PNEUMONIA

Freeman and Hoppe report twelve cases of pneumonia occurring in infants and children in which treatment consisted of the intravenous injection of mercurochrome-220 soluble, and the results of animal experimentation. They report that following the injection of mercurochrome, the fluid squeezed from the lungs inhibits the growth of bacteria. Of the twelve cases of pneumonia, seven were cases of bronchopneumonia and five were lobar in type. Two patients died. In one case death was inevitable before the drug was given. The other child, with cyanosis of unknown origin existing for several years, showed definite improvement at first but later failed to respond to treatment. In seven cases one injection was all that was required. Three cases required two injections, and two cases required three injections. The average dose was 0.005 gm. per kilogram of body weight, using a 1 per cent solution. The authors call attention to the fact that a very marked clinical improvement usually occurs a few hours after the injection, and that this im-

provement sometimes occurs without any marked change in the temperature or pulse rate. It was noted that these cases of pneumonia treated with mercurochrome ran a much shorter course than cases of pneumonia of the same severity in which this drug was not used. The systemic reaction is mild in children.—Journal A. M. A.

POTASSIUM AND ALUMINUM SULPHATE FOR LAMINITIS

I will pass on one of my old standby treatments for all kinds of laminitis, both in the horse and cow. First, I will discuss briefly the physiological action of potassium and aluminum sulphate (common alum). It abstracts copious amounts of fluids from the bowel walls and then by its astringent effect prevents reabsorption. This is wherein the value of the drug lies. It is used by a great many veterinarians in various sized dosage and has been used by the layman for a long time. In the treatment of laminitis, I have used it about as freely in my practice for several years as I have Epsom salts.

One pound is the dose, dissolved and given as a drench, for all kinds of laminitis both in the horse and cow, also for beet top poisoning caused by engorgement with beet tops when animals are not used to them, possibly due to oxalic acid poisoning.

Where horses have been gorged on grain, I first give a physic ball, then the alum, also all the water they will drink after the alum is given, and then one-half grain arecalin hypodermically. This floods the bowels with water and allows the grain to pass off. The alum prevents fermentation and absorption of toxins. This wards off stiffness, and if the case is handled in time before the stomach is ruptured, the outcome is favorable. The stiffness will leave in four to six days according to the severity without any other attention, except removal of the shoes, and I have my first case yet to see where the animal is left with chronic laminitis. Rupture of the stomach often happens after ten to twelve hours in cases not treated in time and is mostly due to fermentation.

If the horse or cow already has diarrhea, I do not give the physic ball. I have treated several cases where horses got all the wheat they could eat, were treated before fermentation set in, and were as well as if they had never overeaten. It works the same on green-corn founder.

This drug might be experimented with in other ailments where autointoxication exists. I have used it only once in other than the conditions previously mentioned, and that was in a mule with gastro-enteritis where peristalsis had ceased. He got well, but I am only mentioning this along the line of research.

W. L. Myers, D. V. M.

Holly, Colo.

Comment: Some find a solution of alum of this strength objectionable as a drench on account of its great astringency rendering it exceedingly difficult for some animals to swallow. Injecting it through a stomach tube obviates this difficulty.—Ed.

BARIUM CHLORID IN COLIC CASES

I should like to have reports on results obtained from the use of barium chlorid hypodermically in colic cases.

L. C. Hull

Joslin, Ill.

Reply: Barium chlorid is an irritant prone to produce abscess or sloughing when used hypodermically. Used intravenously it is uncertain in action and dangerous for horses. In other words, it is the least desirable of the quick acting cathartics. The indication for it is where a moderately quick acting, powerful, drastic cathartic is wanted. It has been recommended in forage poisoning in horses where, in addition to unloading the bowels, the intense congestion it occasions in the abdominal viscera is supposed to relieve the congestion in the brain and meninges, thus overcoming the delirium. Never use barium chlorid hypodermically at all and use it intravenously only as a last resort.

RESPIRATORY DIFFICULTY IN MULE

Mule, five years of age, in good condition; temperature, pulse and mucous membranes normal; breathing at rest slightly accelerated; lungs clear, except respirations. This mule appears sound and normal in every way; weight around 1600 pounds; used on grading work; has never been overheated as far as I can ascertain.

This mule cannot stand moderate work. He simply runs clear out of wind. There is no evidence of emphysema. I have not been called to treat the animal. What is it? Asthma?

H. L. C., Illinois

Reply: Readers are invited to give their opinions on this as well as on all other queries answered in this magazine. Personally we

should make a very thorough examination of this animal's heart, both at rest and at work, before we looked elsewhere for the trouble.

MARE WITH CRAMPS IN HIND LEGS

I was called to see a big farm mare, weighing 1600 pounds, five years old, not pregnant. The owner said over the telephone that the mare had azoturia. When I arrived I found he animal very nervous. She had not been worked for several days but had been out in a large lot with several other horses. She was in very good condition, that is, fat and well muscled. Temperature 100° F.; pulse and respiration full and strong; muscles of back and gluteal region seemed a little swollen but not hard. I drew the urine. It was cloudy at first but later cleared up and became normal in color.

The mare had cramps in the hind legs and the back would seem to give way. She tried hard to keep on her feet but would go down, lie there a few seconds and then struggle back on her feet. There were no signs of colic, no bloat in the cecum, and between spasms the animal seemed perfectly normal. I gave her an anodyne and a purgative, rubbed a little white liniment over the loins and hips. I stayed with her about an hour. She seemed to get easier, and the spasms were further apart. I saw the owner that evening and he said the mare seemed better but was staggering about in the lot where he had turned her. She gradually got better and after three days' rest was put to work again.

The owner told me he had fed all of his horses, six in number, some moldy alfalfa, but the other horses were not affected, and he generally let them run in the pasture after dark. What was the matter with her? I was frank and told the owner I was not sure what the trouble was, but that it might possibly be due to the moldy alfalfa. But why should the mare cramp down in the hind legs only?

G. H. C., Okla.

Reply: To justify your diagnosis one might point out that partial paralysis is far more common than complete paralysis among those cases of mold poisoning that recover and if only certain groups of muscles were to be affected, it would be quite as likely to be the ones you observed as others, and that answers your last question. That only one of several animals exposed to the same condition was affected by no means disproves your diagnosis since different animals vary greatly in their susceptibility to poisoning by moldy feed.

RECOVERIES FROM TETANUS WITHOUT TREATMENT

I have had a number of tetanus cases during my fifteen years in practice, giving most of these the serum treatment, and have had recoveries in about 40 per cent of them.

The two cases following have been a lesson to me.

Case No. 1. I was called to see a bay horse with tetanus, and as there was little value placed on the animal, since he was over 18 years old, I advised the owner to kill him, as the teeth were set and he was in bad shape generally. About ten weeks later, I met the owner driving a milk wagon with the same horse. I was astonished and asked what had been done. He said they turned the animal out to die but placed a bucket of water in the fence corner up high and gave no medicine.

Case No. 2. I was called to see a bay mare, twelve years old, with a bad case of heaves, and showing symptoms of tetanus of average severity. They said the mare was worth about $35.00. So I advised keeping the animal in a quiet, dark place, feeding gruels, etc. No medicine was given. The mare recovered.

Chas. G. Shreve

Martin's Ferry, Ohio.

DECOMPOSED FETUS IN MARE

I have a case that has been very interesting to me. A mare was due to foal the sixth day of April, 1924. The owner called a veterinarian on April 9th. He found an anterior presentation with the head back over the shoulder and the uterus so contracted it was impossible to deliver the fetus. The owner was advised to destroy the mare, but this was not done, and she lived. She was in fair condition all summer but had a very offensive discharge until I examined her on October 6th and found the fetal bones which I removed. Today, October 8th, the mare is in good condition with very little discharge.

I have never heard of such a case in a mare and thought it would be interesting to some other practitioner. K. K. Shott

Buhl, Idaho

Comment: Cases such as the one described are rare but not unknown. The writer once removed a fetus in an advanced state of decomposition and thereafter delivered a living twin. The mare does not stand a thing of this sort nearly as well as the cow or ewe. Cases of mummified fetus and of fetal skeletons in the uterus of the latter animals occur frequently.

USE OF THE STOMACH TUBE IN HORSES

About every so often I read an article in regard to using the stomach tube, but nothing is said regarding the method of passing it via the mouth by strapping the mouth shut and passing the tube through the interdental space. To me this method far excels all others. The horse will not fight the tube the least bit, and neither is there any hemorrhage following.

The mouth is strapped shut, preferably with a halter made for that purpose. The tube (heavy black tube, commonly known as Cahill tube) is oiled and inserted in the interdental space and passed into the esophagus without further ceremony. The ease with which it is passed with no opposition from the horse and no hemorrhage, makes it the ideal way for administering medicine.

A. N. Overbaugh, D .V. M.

Hull, Iowa.

Comment: A good many years ago, probably about fifteen, when the use of the stomach tube was discussed a great deal because it was then just coming into popular use, Dr. H. B. Treman of Rockwell City, Iowa, wrote a short article advocating this method of passing the tube. However, we believe the method never found very great favor, probably for the reason that most of the men who were using the tube at that time had learned other methods and were slow to change, and it has not been mentioned for so long that many who have commenced using the tube since that time do not know of it.—Ed.

UMBILICAL HERNIA IN COLT

I am writing for the best method of operating on a two-year-old gelding for umbilical hernia with adhesions. This colt was affected with umbilical hernia at birth, but it had disappeared when he was a yearling. I castrated him at two years old and shortly afterward the enlargement returned. It is about the size of a small hen egg and firmly adherent, cannot be returned and no opening can be distinguished.

—L. L. B.

Reply: In the treatment of the colt mentioned, it will be necessary to throw and confine the animal and carefully dissect the peritoneum loose from the skin or subcutaneous fascia and replace it in the abdomen. Then use hat pins if they still can be obtained, or even ordinary skewers from the butcher shop, inserting them through the skin and across the opening in the abdominal wall in the form of an "X." Wrap a strong cord around this back of the ends of the skewers so that they will hold in place, puckering the skin up and drawing it up tight enough to slough it off slowly, not quickly. The inflammation and swelling set up in this manner will probably close up the hole in the abdominal tunic and cover it over with a strong fibrous tissue. After the bunch of skin included in the ligature sloughs off, there will be almost no scar left.

AZOTURIA TREATMENT SUCCESSFUL

Last spring I had started to a town thirty-five miles away to test some cows for tuberculosis. When about six miles out, I found a man who was dragging the gravelled highway having trouble with one of his horses. A large, white stallion was down in the ditch unable to rise, but trying at times. After getting the history, I diagnosed azoturia.

Back in my office I had what was to me a new treatment for this condition, a trade preparation containing the chlorates of calcium, potassium and sodium, which I had not had an opportunity to use. I drove back to town and got the medicine and the outfit for using it, which consists of a gallon bottle of distilled water and an air pump with which to force the fluid from the bottle into a blood vessel. In the meantime, I had the owner keep the horse covered with a robe I had in my car.

After putting a rope around the horse's neck and around the pastern of the upper hind leg and pulling it forward out of the way, I succeeded, after some difficulty, in forcing a long needle into the vena saphena where it passes over the inside of the hock. I then forced air into the bottle with the gallon of water containing the contents of one vial of the medicine, and this was forced into the blood stream.

The exciting part of it to me was that before the water was quite all out of the bottle, the pressure forced air into the tube, and instantly the bubbles commenced to boil out from around the needle where it entered the skin. I jerked it out and waited a few minutes, expecting all the time to see the horse "pass on." But he didn't, so I evacuated his bladder and told the owner to get the animal hauled into town and put in a warm place and I would see him again that night.

I then went on my way, and when returning shortly after dark that night, I went to the barn where the horse had been hauled in a truck. I found the stallion up, but he couldn't stay up long at a time. He would get up and lie down again every few minutes. I catheterized him

again and gave him some mild sedative, more for the owner's benefit than for the horse, and went home. The next morning I found the horse up, and while I was there, he voluntarily evacuated the contents of his bladder.

I told the owner to call me if I was needed. He didn't call, and in a few days I saw him working the horse again. The worst of it all is, I haven't received any pay yet for treating the horse. But I certainly like that new treatment for azoturia.

J. F. McGhee

Brookings, S. D.

Comment: It is ungracious to criticize the management of a case so successfully handled as this one and perhaps in this case the conditions didn't justify it, but since one of the first requisites for treating azoturia cases is quiet, isn't the practice of taking these animals to the home barn to be avoided, except they be down on city streets or other very public places, or the inclemency of the weather is so great as to compel it? It is often less work to provide care and temporary shelter at or near the place where the animal is down than it is to move them on a drag and it avoids a whole lot of excitement that is mighty bad for an animal down with azoturia.—Ed.

BLISTERING APPLICATIONS FOR ARTICULAR WOUNDS

Severe wire cut on the inner aspect of the right front foot, extending from front to rear of the foot. The cut extended in front to about one-half inch below the top of the hoof and in the rear almost to the frog. The lateral cartilage was severely lacerated. I was called on this case October 19th. I administered a prophylactic dose of tetanus antitoxin; worked as much cantharides blister into the cut as possible without setting up a hemorrhage; applied more blister to strip of muslin and applied directly to cut covered with cotton; bandaged with many-tail bandage, using gunny sack and hame string around the fetlock for outer dressing. I left this dressing in place until October 23rd, when I removed it and repeated the procedure. Two more treatments at six-day intervals will put the wound in condition to receive a liniment and dusting powder, and it may be treated as an open wound.

For the past eight years I have followed the application of blisters to open wounds located in or around articulations, and those who have never tried the treatment will be surprised at the results obtained. It removes a large amount of the lameness that usually accompanies an open joint; it cleans up all the lacerated shreds of tissue; it draws blood to the part, stimulates a healthy granulation, destroys odors, and we all know that there is not much danger of infection in a wound so treated.

I am of the opinion that Dr. Steffen, of Wisconsin, was the originator of this treatment nine or ten years ago, but it is worth repeating.

L. C. Hull

Joslin, Ill.

ACTINOMYCOSIS IN HORSES

Case No. 1. A seven-year-old mare had weighed about 1,500 pounds but had lost weight, decreasing to about 1,200 pounds. She was dull and lazy, but otherwise all symptoms of disease were lacking. The owner gave the mare to a dealer, who brought her to me to have the teeth floated and requested a tonic, which was given. I examined the animal, but nothing of a definite nature could be detected. The owner was advised that the condition was probably from an actinomycotic lesion in some of the internal organs.

Three days later the mare died. On autopsy, the left kidney was found to be about the size of a football, enlarged by multiple actinomycotic abscesses, and the larger one of these had ruptured, releasing about two quarts of pus into the abdominal cavity, with a consequent peritonitis which caused the death of the animal.

Case No. 2. A gelding, eight years old, good worker, active, energetic, but became very dull and slow in the morning, hanging back in the harness all day. He would not eat at night or the following morning, at which time I was called. Upon examination I found extreme colicky pains; high temperature; weak, rapid pulse; short, rapid respiration. I gave the horse some adrenalin chlorid hypodermically, pronounced the case one of internal hemorrhage and left on another hurry-up call, agreeing to return in two hours and advising the owner of the horse to dig a hole.

When I came back in two hours, the horse had been dead one hour. Autopsy showed the animal to have died from a rupture of the liver, this organ having become enlarged and necrotic from a foxtail infection of the tongue carried by the blood stream to the liver, which showed extensive actinomycotic lesions. It weighed about 56 pounds and contained seven abscess foci, each containing pus in amounts from one to two quarts, there being a total of about two and one-half gallons of pus in the

liver. The abdominal cavity also contained a blood clot weighing about twelve pounds, and the cavity also had about two gallons of blood serum (defibrinated) floating among the intestines. The other tissues and organs had a healthy appearance, there being a few very small foci in the lungs which were apparently healed.

S. A. Freeman, D. V. M.

Gridley, Cal.

PRACTICAL POINTS IN THE USE OF SALTS

Sodium sulphate and magnesium sulphate act as cathartics in two ways. When present in the intestinal contents in dilute solution, they retard the absorption of fluid from the intestines and the volume and weight of the fluid stimulates intestinal peristalsis and catharsis results, the fecal discharges being more or less fluid. When a larger quantity of salt is present in the intestines, forming a more concentrated solution, fluid is drawn from the capillaries and lymph spaces in the intestinal wall into the lumen of the bowel and the resulting increase in the volume and weight of the intestinal contents stimulates peristalsis and produces catharsis. The fluid withdrawn in this way from the blood and lymph is replaced by absorption of fluid from any of the tissues or cavities in which it may be present in excess. By this action dropsical collections, serous effusions and inflammatory exudates are absorbed, and metabolic and bacterial products in solution in the blood are eliminated.

Therefore, when sodium sulphate or magnesium sulphate is used to bring about an absorption of exudates or transudates or to eliminate abnormal substances from the blood, it should be given in concentrated form, being dissolved in just enough water to obtain a solution. On the other hand, in constipation, fever, and other conditions in which the secretions are scanty, the salt should be given in dilute solution and the patient should be encouraged to drink plenty of water. If vomiting follows the administration of a concentrated solution to the dog, it should be repeated in more diluted form.

Sodium sulphate and magnesium sulphate in solution not only themselves resist absorption from the intestines, but also retard the absorption of any substance which may be in solution with either of them. Consequently, the local action of a drug on the intestinal wall or contents may be prolonged and its absorption delayed if it can be dissolved in a dilute solution of sodium sulphate or magnesium sulphate. This same property of resisting absorption also makes a dilute solution of one of these salts more efficient in softening fecal or intestinal impactions when injected per rectum than water or normal saline solution because the latter are rapidly absorbed. Normal saline solution is to be preferred for rectal injection when it is desired to introduce fluid into the blood, as after severe hemorrhage, but a dilute solution of sodium or magnesium sulphate will act more efficiently in softening dry masses in the lumen of the bowel.—Louis A. Klein, Univ. of Penna. Bulletin, Oct. 4.

ANTHRAX TREATED WITH NEOARSPHENAMINE

In Vol. V, No. 9, September 20, 1924, number Venereal Disease Information, issued by the United States Public Health Bureau, is the following:

Anthrax treatment with intravenous injections of neosalvarsan.—O. Grasser Wien. Klin. Wchnschr., Vienna, 1924, XXXVII, 261.

"One injection of neosalvarsan generally suffices to cure anthrax. Some rise of temperature is associated with it. The author treated 54 cases. Of this number two died of sepsis, one died right after entering the hospital, and one of pneumonia. The others were cured. This treatment is recommended for veterinary surgeons."

TREATMENT OF EAR CANKER IN RABBITS

As stated by David Marine, of Montefiore Hospital, New York, in Science of August 15, 1924, Vol. LX, p. 158, ear canker (Psorocoptes cuniculi) is one of the most troublesome diseases that has to be contended with in the rearing and care of rabbits. We have to be constantly on the alert to discover and treat it in the animal room of the Stanford Medical School. Our method, while different from the one recommended by Mr. Marine, is just as effective as the kerosene spray which he recommends in the article referred to above. For many years we have used a 3 per cent carbolized sweet oil. This should be sprayed or poured into the ear in sufficient amount to penetrate the paper-like structure which the mites construct. Any oil or member of the petroleum derivatives is instantly fatal to all insects and

mites. Kerosene has the advantage of being more rapidly diffusible and penetrating than sweet oil; it is also more or less irritating and no doubt produces a smarting when applied to the sensitive inner surface of the ear. On the other hand, sweet oil acts less rapidly as regards penetration, but it is soothing and softens the scales, hastens desquamation of the dried epithelium and favors rapid healing; the phenol relieves the itching and antagonizes infection. The purpose of this note is not to criticize but simply to mention an additional therapeutic remedy for the disease.—Frank E. Blaisdell, Sr., Stanford Medical School, San Francisco, in "Science," November 7th.

TAIL SNAPPING IN PIGS

In December, 1923, I went to see how my hogs were prospering on the farm. To my amusement as well as chagrin, I beheld my fall shoats eating each other's tails. They were a sorry looking bunch of pigs, seventy-five of them weighing from forty to sixty pounds. They all appeared to enjoy the sport until their turn came to receive the bite. Some of them had lost so much blood that they were gaunt and weak. They had been at it for two or three days. All had part of their tails gone and some had no tails left.

I was told by my man that a few of the smaller pigs had had sore tails from frostbites, and the blood from these sores started the pigs to become cannibals in a few hours. This was my first experience with tail snapping, and I saw that something had to be done or many of the shoats would die.

I bought an old horse from a neighbor, killed it and put the raw flesh where the pigs could have free access to it. This proved a perfect and immediate cure for tail snapping. I am satisfied that the taste of blood on a pig's tail will start this vicious habit. Gorging the pigs with fresh meat will cure it.

C. G. Glendinning

Clinton, Ill.

The National Poultry, Butter and Egg Association has taken cognizance of the unusual prevalence of pneumonia in chickens at the present time and cautioned its members against purchasing poultry from flocks harboring this disease, which it believes is a new one and infectious.

HEMORRHAGIC SEPTICEMIA AGGRESSIN

From recent reports it is evident that hemorrhagic septicemia aggressin is the most effective and dependable product employed for combating hemorrhagic septicemia in domestic animals. The possibilities of active immunization with the aggressin marks another achievement in our effort to control infectious diseases in animals.

It is commonly known that the prevalence of hemorrhagic septicemia in the fall and winter is more general than at other seasons. During the present season, therefore, veterinarians generally should take advantage of this new immunizing product developed and endorsed by the United States Bureau of Animal Industry.

CONVULSIONS IN PIGS

I was called to see some shoats that were having fits. One was down all the time and another one would have a spasm every two or three minutes. The muscles would contract and twitch. The pig would move backwards with head up and front legs rigid and dragging. The temperature was normal. Seven or eight were having lighter spasms. I administered salines and lobelin sulphate. All responded to treatment except one that seemed to be worst affected. I saw this pig four or five days afterward and it was still having fits. I held postmortem examination on the one that was down, expecting to find the stomach greatly irritated, but it was very slightly so, with the lungs, heart and glands all clear. There was extreme constipation but no worms.

History: A stock food man sent for their worm expeller and gave the pigs a "forced feed," but the worm expeller failed to show up. They gave another feed or two, then another forced feed and then the worm expeller. The next day the hogs were in the condition in which I found them. The animals were on a concrete floor in a cattle shed. The floor was clean and there were slats to keep the hogs from going under the feeding floor, under which were a few grains of moldy corn that the cattle had dropped. I thought the trouble came from the moldy corn. Was I right?—T. R. I.

Reply by A. T. Kinsley: Your very interesting description of the occurrence of convulsions in pigs has been read with considerable interest. Such conditions are not at all unusual and, of course, may be associated with different causa-

tive factors In the case you have described, it is very probable that the convulsions are due to reflex in the digestive tube and have been induced by the diet. Convulsions of dietary origin are usually not difficult to overcome by hypnotics or narcotics, and they can usually be prevented by providing the proper diet. Just why digestive derangements produce reflexes resulting in convulsions has not yet been determined.

I believe that your case will be of special interest to the readers of Veterinary Medicine, and should any have a different version as to the causative factor in these cases, such information will be gladly received and given consideration in a future issue.

INFECTION FOLLOWING HOG CHOLERA VACCINATION

I should like some advice on a hog cholera break which I have had. On August 4th I vaccinated forty pigs, weight 40 to 140 lbs., serum dosage 35 to 55 mils, virus 2 and 4 mils. Nine days later, about fifteen of the larger ones were sick with temperatures 104 to 107, diarrhea, gummy eyes, and the usual symptoms of cholera. These hogs were not sick when I vaccinated, and there was no chance of previous infection. They were fed garbage. I had them taken off feed thirty-six hours prior to vaccination and held from full feed for six days. What is your idea of the cause of the break? The serum dosage was larger than required for these weights. I used serum with expiration date of September, 1925, received the same day on which it was used.—B. H. S.

Reply by A. T. Kinsley: It is noted that you used a serum produced under government supervision and not outdated until September, 1925, and we are led to believe the virus was from the same establishment. It is noted that your dosage of serum and virus was ample, at least from the viewpoint of practically all authorities, to have protected the swine that were injected against hog cholera.

It must also be assumed that there are other diseases in swine that produce symptoms similar to those of hog cholera. According to your report, the temperature of the pigs ranged from 104 to 107 and there was a conjunctivitis. These two symptoms are quite prone to occur in other infections. Unfortunately, so far as the diagnosis is concerned, you were not privileged to autopsy any of the affected animals, and consequently there are no lesions on which to pass judgment.

Generally speaking, from the foregoing statements, I should be inclined to say that the condition arising in the hogs nine days after vaccination, as per your report, may be some infection other than hog cholera. Should you have any further definite information on this case, I shall be very glad to hear from you and should be pleased if we could make a positive diagnosis.

My suggestion is that you hold an autopsy and have some laboratory nearby make cultures and ascertain whether or not other infections are existing.

TRICHINOSIS OF SWINE

Trichinosis, primarily a disease of hogs, has played a considerable part in the world's history. The old Jewish law against eating pork was in all probability the result of havoc wrought by this disease. Great epidemics in Europe have been caused by the parasite, Trichinella spiralis, and some forty years ago it caused international complications between this country and Germany, with the result that American pork was barred from German markets. The danger from eating raw pork is today common knowledge, yet from 0.5 per cent to 2 per cent of the population of civilized countries show trichinella embryos at post mortem examinations. — Animal Pathology Exchange, University of Illinois.

TREATMENT FOR STOMACH WORMS IN SHEEP

I note in the October issue reference to a mixture of copper sulphate and sodium arsenite for treating sheep infested with stomach worms, this method being the one described by Sir Arnold Theiler of South Africa. I should like to know the dose that is safe for sheep.—A. H.

Reply by Dr. M. C. Hall: In South Africa good results have been reported from the use of a mixture containing one part of sodium arsenite (testing 80 per cent arsenious oxid) and four parts of copper sulphate. The total dose of the mixture is as follows: For animals 2 to 4 months old, 180 milligrams; 4 to 6 months old, 250 mg.; 6 to 10 months old, 375 mg.; 1 year old, 500 mg.; 2 years old or older, 625 mg. This may be given as a powder. Remove food and water the afternoon before dosing; dose the following morning; allow food that afternoon and food and water the next morning. The dose may be repeated the day after the first dose, in which case food is allowed the after-

noon after the first dose, the animal is dosed the following morning and fed that afternoon, but no water is allowed from the afternoon preceding the first treatment until the morning following the second treatment. Owing to the poisonous nature of arsenic, it is best to test the treatment on a few sheep to be sure the dose is safe before dosing a flock. If the treatment is repeated at intervals of a month or more through warm weather, the single treatment should be used.

The Oklahoma experiment station claims very good results from a solution containing 1 per cent copper sulphate and 1 per cent by weight of snuff or powdered tobacco. The tobacco is steeped overnight and the copper sulphate then added. The dose is 50 mils (about 1½ ounces) for lambs and twice this amount for full-grown sheep.

SUSCEPTIBILITY OF SHEEP TO PARASITIC DISEASES

Sheep are very liable to attack by parasites, probably suffering more severely from this cause than any other kind of livestock. The importance of parasites and parasitic diseases of sheep is the more evident because of the fact that sheep are but little subject to serious bacterial plagues or virus diseases. In this country sheep rarely have tuberculosis, which is one of the serious conditions in cattle and swine, and among sheep there is nothing comparable to the devastating outbreaks of hog cholera among swine. Occasionally a virulent strain of the bacillus producing lip-and-leg ulcer will spread under favorable conditions and necessitate the treatment of entire flocks, or individual sheep will die of pneumonia or other bacterial diseases, but the steady loss of sheep, mutton, and wool from disease in this country is due mostly to parasites.

The damage from parasites is greatest as a rule among lambs and young animals. The young tissues seem less resistant and more intolerant of injury and the more sensitive nervous system breaks down more quickly under the influence of parasitic injury and poisoning from the excretions and secretions of parasites. It also seems to be fairly well established that in general young animals are more easily infected by parasites than older ones, although very old sheep sometimes appear to acquire an increased susceptibility to infection. Hence it is important in undertaking to prevent infestation with parasites to pay especial attention to the care and handling of lambs and yearlings.—M. C. Hall, U. S. Dept. of Agr., Bul. No. 1330.

ANKYLOSTOMIASIS AS A FACTOR IN FRIGHT DISEASE OF DOGS

Our experience in treating this disease includes all breeds of dogs and the history we get is usually the same. The dogs have been apparently normal when they will suddenly jump up and run around, acting as though they were scared to death, in some cases barking, running around blindly into and over objects and many times jumping in the air and falling flat on their sides. They sometimes and usually champ their jaws and froth at the mouth. They revive as suddenly as the onset and are apparently normal. All of the cases we have brought into the hospital show a record of one or several attacks previous to the one where the owner decided to have them treated. In most cases there is a history of diarrhea, always a high temperature; in a few cases a muco-purulent discharge from the nostrils, a discharge from the eyes, rapid pulse, high blood pressure, dilated pupils, respiration rapid. This gives in a general way the symptoms usually noted.

Cause: Ankylostoma canina (hook-worm): The body is whitish in color and slender, slightly enlarged at the anterior extremity. The female is 3/8 to 3/4 inch in length and the male ⅜ to ½ of an inch in length. The eggs are segmented within the body of the female and when expelled to moist earth, develop embryos in three to six days. These become encysted and probably through the medium of contaminated water reach the intestines of the dog where they mature. The worms fix themselves to the mucosa of the small intestine where they extract blood, and in badly infested cases produce ulcers and a secondary infection arises.

Post-mortem appearance: Shows the alteration of anemia and cachexia, the spleen mottled and slightly enlarged, the mucosa of the small intestines thickened and marked by numerous hemorrhagic areas and ulcers, and the intestinal contents may be hemorrhagic.

Treatment: Carbon tetrachlorid in suitable dosage for the weight of the animal, followed immediately with a dose of Epsom salts in proportion. Where the animals are nervous, 5 grain tablets of barbital or sodium bromid three times a day for several days After treatment consists of proper feeding of nourishing foods with iron and quinin arsenates with nuclein tablets (Abbott), keeping the dog well housed, isolation for other dogs, and thorough disinfection of kennels and grounds and destruction of feces passed by the infected animals. All

animals that have been exposed are placed under treatment and in this way in kennels where they have many dogs, the sanitary measures can be carried out completely.

Conclusions: In our opinion the symptoms related are a reflex meningitis produced by toxemia due to absorption of toxic material from worms, secondary infection, through the ulcers in the intestinal walls.

J. G. Horning, D. V. M.
A. J. McKee, D. V. M.

Houston, Texas.

PUPPY AFFECTED WITH PERSISTENT DIARRHEA

I have a German Police pup, three months old, and he has the most persistent case of diarrhea that I ever came across. I have used nearly everything that I thought would be of any value, including tincture of opium, paregoric, bismuth subnitrate and subcarbonate, salol, milk of bismuth and chalk mixtures, but not any of them seem to be of any avail. There is no evidence of distemper. There is a gastritis, and the pup is unable to retain any food. I have given him only a very limited supply of boiled milk in which has been administered the milk of bismuth.—J. S.

Reply: We should recommend the use of an iron, quinin and strychnin tonic and ground raw meat containing considerable tallow. Often the administration of a half-dram or a dram of chloroform in capsule 15 to 20 minutes before giving the remedial dose will prevent its being rejected by an oversensitive stomach.

SKIN RASH IN DOG

Airedale bitch, spayed, two years old, suffering from disease affecting the ventral surface of the abdomen and inside of hind legs. It begins with reddening of the skin and formation of pustules which leave depigmented blotches on which the hair does not grow well. The disease seems to be spreading over the flanks and costal surface. This female was vaccinated with canine distemper vaccine. The breaking out was not noticed until after vaccination. Is it possible that this is a vaccine rash? Intense itching is a prominent symptom. It has gradually been getting worse for six months.—H. H. H.

Reply: The skin affection is not a vaccine rash but may be due to some digestive disturbance. Wet with 5 per cent sodium carbonate (washing soda) to relieve the itching. Apply mercurial ointment (official), being careful to prevent the animal from licking it off, or if that is impracticable a sulphur and pine tar ointment.

SUGGESTIONS FOR FEEDING THE SICK DOG

The vital resistance of the sick animal must be maintained by suitable food as it has been actually proved by scientific investigation that the lack of or improper food prevents the system from successfully combating the entrance and growth of infecting micro-organisms.

As the sick animal's digestion is usually impaired and as easily assimilated, proteid food in particular, is necessary in order to replace the tissues destroyed, or to make up for their loss, the following suggestions as to diet are here offered:

The food must not only be capable of ready assimilation but preferably concentrated so as not to weary the sick animal with much swallowing and should be made not only palatable, but attractive to smell as well. Milk, if given for any length of time, should be varied by the addition of infant foods such as: Mellin's Food, Nestles' Food, Eskay's Food, Malted Milk, barley water, thin, strained oatmeal or rice gruel. Often the addition of salt or sugar improves the taste.

The following will be found useful in distemper, vomiting, diarrhea or in any condition in which the digestion is impaired:

Peptonized milk: In a clean quart bottle place one peptonizing tablet or tube; add a teacup of cold water; shake and then add a pint of fresh cool milk and stir thoroughly. Place the bottle, for five to ten minutes, in a pail of water as hot as the hand can bear. Remove and immediately place on ice, so as to stop the peptonizing action, otherwise the milk may become too bitter.

Digested gruel: Make a thoroughly boiled and strained gruel of oatmeal, barley, wheat or arrow-root. To one-half pint, while hot, add one-half pint of fresh, cold milk and one tube or peptonizing tablet. Put in a warm place for about thirty minutes, then place on ice.

Modified milk: Take one pint of milk, one and one-half ounces of cream, and one and one-half ounces of sugar of milk and keep in a cold place. It has been stated that the sugar of milk will change the putrefactive intestinal flora to lactic acid flora in from twenty-four to thirty-six hours.

Beef essence: Take one pound of fresh, lean, finely chopped beef; pour over it eight ounces

of cold water; add five drops of hydrochloric acid and one teaspoonful of salt. Stir well and leave for three hours in a cool place. Press meat through a sieve, adding a little water toward the end of the straining process. Feed cold.

Barley water: Two good sized teaspoonsful of mashed, pearl barley and one pint of cold water boiled slowly down to two-thirds and strained.

Oatmeal water: One tablespoonful of oatmeal flour to one pint of water; boil down to two-thirds of a pint; strain.

Rice water: Two ounces of clean rice in two quarts of water; boil for one and one-half hours.—W. J. Lentz, in Univ. of Pennsylvania Bulletin, Veterinary Extension Quarterly.

CHLORAL HYDRATE IN CANINE SURGERY

Yesterday I operated on a Collie dog, five years old, for a large fibroma on the left flank and thought I would try the injection of chloral hydrate solution per rectum. I used chloral hydrate and gum acacia, of each, two ounces, and distilled water one pint, of which I injected two ounces. After waiting 25 minutes, the dog did not show any signs of sleep, so had to administer ether. I have read about many veterinarians using the chloral solution with success. This is the second case in which I have used it, and I cannot get any effect from it. I should like to know the reason I do not get the results that others speak so highly about.
—J. F. D.

Reply: It is a little bit difficult to explain why you did not get a toxic, if not a lethal, effect from chloral hydrate in doses of the size administered to your patient. As to why you are not satisfied with the results, that is more easily explained. Chloral hydrate, except in poisonous doses and dangerous doses at that, is not an anesthetic but a hypnotic; and while in sufficient doses, it will prevent the animal from struggling because it inhibits muscular action, it does not in subtoxic doses prevent pain.

Again and again, there have been waves of popularity for chloral hydrate as an anodyne and sometimes as an anesthetic for operations on animals, chiefly horses; but always after brief popularity, this agent has lost favor, for the reason that it is variable in action and uncertain in effect. So long as we have ether and chloroform and morphin and the list of splendid local anesthetics, we are of the opinion that there can be no permanent popularity for chloral hydrate as a substitute for any of them.

MULTIPLE FRACTURE OF DOG'S LEG

An interesting case is here at my hospital. A small Italian greyhound was run over by a five-ton truck; the right humerus was broken at a place an inch from the humero-radial articulation and also again in the radius an inch below the articulation. The leg was sticking out at right angles to the body. I realize that these cases are very common in cities and that treatments vary much. Here is the treatment which has given me the best results in the past twenty-six years. It will have to be varied some to suit the individual case, but has been uniformly successful (with forelegs especially) in my hands.

In this case, two elbow splints were prepared from wood from an old grape basket, a layer of cotton first applied, splints on either side and a gauze bandage lightly applied to allow for swelling, which always occurs and will sometimes remain four or five days. When the swelling coming with primary inflammation has subsided as in this case, the splints are removed. A comparatively thin layer of cotton is applied; then the plaster-of-Paris bandage, already immersed in hot water, is applied and allowed to set.

Sometimes elmwood splints are used in this, though if the cast will fit the leg and tension is not too strong or bandage too loose, they are usually unnecessary, except in very large dogs. This particular case has been thus treated, and results are all that could be desired. The leg is straight, no limitation of movement, and while the bony enlargement in the lower break is very slightly noticeable, much of this will, of course, absorb.

As soon as the plaster was hard in this case, a gauze bandage was wrapped around and above the elbow. The bandage was rolled under the body and a couple of turns taken around the body and then across the humerus around the body again. This prevents any undue tension on the leg.

This dog has walked on the broken leg as well as the others except for the stiffness of gait at the elbow, almost from the day the cast was applied.

Another reason for the gauze bandage outside is to keep the dog from gnawing the bandage or cast. And if a little undiluted creolin is poured on the bandage, the patient will usually leave it alone.

It is necessary to be careful also to get the proper tension in such a cast. If too large, the cast will be too loose and is not much good; if too tight, the foot will inflame and enlarge, and it is necessary to remove the cast and wait, having the leg in a bandage, before resetting another cast; but when properly applied, it is the method par excellence for controlling such conditions. If the leg is straight at the time it is set, it will be straight when the cast is removed and will not have the curved appearance so common when a good stiff bandage is not used.

Ralph W. Balkam, M. D. V.

Springfield, Mass.

A COURSING MEET

On October 10th to 21st, 1924, inclusive, the National Coursing Association held its fall meet at Chapman, Kansas.

Dog racing, commonly known as coursing, is fast becoming the popular sport of an ever increasing number of clean sportsmen throughout the United States. Its popularity is attested by the fact that there were entries and owners present at the meet from California, Texas, New York, Massachusetts, Florida, Ohio, Pennsylvania, Illinois, Michigan, Minnesota, Wisconsin, North and South Dakota, Nebraska, all the central states, and also Ireland, England, and Scotland.

Prize money aggregating $12,000.00, with a $200.00 silver cup and another silver cup worth $100.00, were awarded the winners.

The meet was held on the edge of town in a park 500 yards long and 200 yards wide, fenced off with burlap.

Some five hundred jackrabbits, trained to dash from one end of the field to their quarters at the other end, were used.

A man known as the slipper holds the two contesting greyhounds on a special leash that frees both dogs at once. These dogs are hardened and finished for racing weeks before the meet and are wiped, sponged, blanketed, and cared for similar to our best race horses. Special care of the feet to toughen and strengthen the foot pads is given. A red or a white woolen collar is put on each dog just before the race. This identifies the dog and he is known as Red and the other dog as White, regardless of body color.

A judge on horseback, a timer, and a clerk stand half way down the field and the race is about to begin.

A long-eared, hopping jackrabbit is freed from the run beside the two ready, straining speed hounds; when the jack has a good 150-foot head start the leash is snapped, the dogs freed together and away they start neck and neck after the rabbit. The gap between the rabbit and dogs closes. The White dog is ahead, he snaps at the rabbit, but a quick dodge and turn and the rabbit is safe—for a second. Again and again the dogs turn the rabbit. Finally the Red dog catches the rabbit in mid-air and scores a kill. Each time the hare is turned, scores for the dog that did it and a final point is made by the kill. The judge waves a white flag; score 7 to 5 in favor of White. Tomorrow White will run against another winner and so on until one dog by process of elimination stands supreme.

Sometimes the rabbit makes a speedy trip to the quarters and safety hole at the other end of the field. Occasionally a good dodging rabbit runs for more than two minutes and unless relief dogs are turned in, the running greyhounds may suffer heart collapse. Such was the case of the running to death of Golden Hawke because the time limit was not succored.

The races are grouped in the following classes: The National Futurity Stake had 523 entries with 248 dogs to start. The National All Age Stake had 90 starters. The National Consolation Stake had 124 starters. Special Puppy Stake with 16 starters. National Purse Stake with 45 starters. National Plate Stake with 23 starters.

Coursing is a clean, enjoyable sport and many towns have their local coursing clubs. If you have never seen a good coursing meet you have missed an interesting time.

Edwin J. Frick

Manhattan, Kansas.

CONVULSIONS IN DOG

I wish to ask an opinion on a case I have had under treatment, as the owner wants to know if a cure can be effected, and if not, wants the animal destroyed. The patient is a Collie dog that had chorea in the facial and foreleg muscles when five months old. I treated him twelve days with 20 and 25 grains urotropin hypodermically, and the dog appeared O. K. when sent home. In about a month the animal showed slight signs of a general nervousness, and two or three weeks later fell in a convulsion which lasted a few seconds. The dog is now close to a year old and has these convulsions about every week or ten days. I came to the conclusion he has chronic epilepsy, for which I treated him with poor results. His

teeth became discolored and there is an offensive odor from the mouth. As soon as he holds his head down in the pan to chew solid food, his head goes to the side, he makes a half circle and falls in a fit. He cannot masticate his food properly. I have used bromides, iodid of potassium, tonics for the stomach, barbital and other lines of treatment with no improvement whatever. I advised the owner to destroy the animal, but should appreciate some further advice in the case.—J. A. J.

Reply: Your advice to the owner of the animal is proper. So far as our experience goes, any treatment that might be given would be only palliative. The tendency will be for the convulsions to occur at shorter intervals as time goes on, finally occurring daily and even several times a day, when death may be expected, which in our experience, has occurred at about two years of age.

INFLUENZA IN CATS

I have come in touch with a number of cases in cats which have baffled me entirely. I feel that you can, perhaps, help me to arrive at a diagnosis. The animal is taken quite suddenly with vomiting, the vomitus being a yellowish, greenish, frothy mucus and contains no food. The temperature varies from 100° to 103° F., pulse full and bounding and correspondingly fast. Some cases have a diarrhea and others not. But the most outstanding symptom is that the patient hangs her head over the milk or water dish as though she wanted to drink but appears disgusted, and as the disease progresses, this position is assumed and maintained for hours at a time. There is complete loss of appetite, great emaciation, and finally collapse and death ensue in four to seven days. The condition seems to assume the character of an epizootic.—A. C. P.

Reply by Dr. J. G. Horning: The condition described is the gastro-intestinal form of influenza. The infection expresses itself locally as an acute gastro-enteritis, thus producing in addition to the usual constitutional symptoms of the disease, abdominal pain, nausea, vomiting and diarrhea. In some cases, the symptoms resemble those of cholera morbus, while in others they are suggestive of dysentery. The duration of the attack is usually from three to four days, but it may be much longer.

We have recently had quite an outbreak of this trouble here in Houston; in fact, it is just about running its course now. Our treatment is first lavage (stomach-washing) with a solution of acriflavine concentrated and Butyn (Abbott). In kittens we use the stomach tube, and in cats we use the esophagoscope for this work. After thoroughly coating the stomach walls with this solution, we wait about five minutes and then use the stomach tube and fill up the stomach with liquid peptonoids. This treatment is repeated every twenty-four hours for three or four days. The results are usually favorable.

ERADICATION AND CONTROL OF POULTRY PARASITES

External parasites constitute a serious problem in poultry raising against which eternal vigilance must be constantly exercised. Fowls continuously harassed by the irritation of biting or burrowing parasites, or devitalized by the loss of blood are not capable of maximum production. Young or weak individuals may succumb entirely while others are rendered more susceptible to infectious diseases. The role played by external parasites in disease transmission has been demonstrated only in a few instances. Limited attempts at transmitting roup and chicken pox by transferring lice from birds dead of these diseases to healthy birds have given negative results.

Treatment for lice consists of killing the lice and destroying the eggs (nits) that are on the birds. Naturally the bird accomplishes this by the use of frequent dust baths. Fine dust interferes with respiration in the louse and death results. Where proper dust baths are not provided or partaken of by the hen, lice multiply rapidly.

Three methods of attack are commonly employed, all of which are good, convenience being the main deciding factor as to which one to use.

1. Dusting by means of a powder thoroughly worked into the feathers. Sodium fluorid or a powder made by thoroughly mixing one part of nicotin sulphate in ninety-nine parts air slaked lime is very efficient.

2. Dipping. Birds may be emersed in a solution of one ounce sodium fluorid to each gallon of water, or a three per cent solution of any good coal tar dip.

3. Greasing. Small amounts of an ointment composed of equal parts of fifty per cent mercuricial ointment and vaselin or two per cent nicotin sulphate in equal parts of lard, tallow, and vaselin, are worked into the feathers of the abdomen, thighs and under the wings. Greasing, if properly done, seems to have the advantage of lasting longer.

The house and equipment should be thor-

oughly cleaned and disinfected to kill all lice present.

Mites, ticks and fleas may be eradicated by the thorough application of equal parts crude carbolic acid and kerosene, used engine oil, crude oil and kerosene, or a four per cent solution of any good coal tar dip to the places they frequent. Scaly legs are best treated by first softening the scales with soap and water and then dipping in equal parts kerosene and crude oil or lard.—Sivert Erickson, Mo. Poultry Experiment Station.

PREPARATION FOR USE IN POULTRY DISEASES

I have used the following treatment in poultry diseases, such as fowl cholera, fowl typhoid, bacillary white diarrhea and internal parasites of fowls. I mix up one gallon at a time of the following formula:

Iron chlorid solution.....1 lb.
Potassium bichromate.....5 oz.

Hot water to dissolve the potassium bichromate, then water q. s. to make one gallon.

I dispense in pint bottles with directions to add to each pint of drinking water one teaspoonful of the mixture. I have had better results generally from using this preparation than from any other mixture or so-called chicken remedy. While I do not mean to brag, I feel justified in saying I have quite a poultry practice. I might say that in addition to the above, I am a crank on sanitation in the poultry houses or quarters.

I have had a few cases of hemorrhagic septicemia in cattle, and after vaccinating the entire herd, I treated all sick animals by giving one tablespoonful of the medicine described above every four hours, well diluted in water. I usually save a satisfactory percentage of the sick. I use this treatment until the sick animals are back to normal condition.

I find the same treatment excellent for coughs frequently found in horses following influenza. I use it in other diseases or conditions also. However, do not think that this is all the medicine I know anything about. I have simply mentioned some of the conditions where this particular preparation can be used to advantage and profit both to the client and the veterinarian.

C. B. Hawes

Poplar Grove, Ill.

BUSINESS METHODS IN VETERINARY PRACTICE

By M. V. Burgett, D. V. S.

In business, where the average individual sells his services to only a half dozen employers in a lifetime, it is calculated that success depends 70 per cent upon one's ability to sell his services, and only 30 per cent upon what he knows or can do.

Would this percentage be even higher with the veterinarian, or other professional man, who, to succeed, must sell his services day by day to nearly every individual in an entire community?

Can it be that the veterinarian has placed too much dependence upon the mere possession of professional knowledge, and has tried too little to sell the idea of the value of his services to the public?

Is the position of the veterinarian analogous to that of a man with a store full of merchandise who makes no effort to sell it, makes no use of advertising, puts nothing in the show window, and charges more for his goods than other merchants do without teaching the public that his merchandise is better?

You and I know that veterinary service pays but does the public know it? If they do, wh, do nearly all of them use home treatments or patent remedies part of the time, and why do many of them prefer the services of a quack if one is available?

If you charge more for your services than home treatments, patent remedies, or the services of a quack cost, and do not justify your charges in the mind of the public, your practice is immediately limited to such individuals in the community as are not ingenious enough to devise home treatments, to those who have a case which they cannot find described on the label of a patent medicine bottle, and to those good people who do not like the quack for social, moral or other reasons.

Are you applying the methods and principles used successfully in other businesses to your practice? Have you got anything in the show window? Are you known as a "Quality House," or are you merely known as a "high charger?"

Ways and means of applying the successful methods of other businesses to veterinary practice will be discussed regularly in this column. Suggestions requested.

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